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Maternal Depression, Perceptions, Contextual Stress, And Parenting

Christine Marie-antoinette Wekerle

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**MATERNAL DEPRESSION, PERCEPTIONS, CONTEXTUAL
STRESS, AND PARENTING**

By

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Submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

Faculty of Graduate Studies
The University of Western Ontario
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ABSTRACT

The relationship between maternal depression and parenting was explored in three distinct ways: (1) the direct effect of maternal depression, as it is measured proximally and distally to parenting, (2) the moderation of proximal and distal maternal depression by contextual stress, and (3) the mediation of proximal and distal maternal depression by maternal perceptions of child problem behaviour. Two aspects of maternal behaviour were examined: aversive parenting (negative control strategies, negative affect, lack of positive control strategies) and positive affect (positive affect and affection).

A community sample of 95 mother-child dyads participated in 12, 1-hr in-home behavioural observations. Also, mothers completed questionnaires tapping maternal depression, contextual stress, and perceptions of child problem behaviour at intake and at each observation visit. Results failed to support the moderator role of contextual stress and contextual stress was not predictive of aversive parenting or positive affect.

Results supported the maternal depression-aversive parenting link across time; maternal depression was not significantly associated with positive affect. Most notably, support was found for the cognitive mediation of depression by maternal perceptions of child problem behaviour. This was established for distal depression only

in the prediction of aversive parenting. In contrast, proximal maternal depression and proximal perceptions of child problem behaviour each contributed to the prediction of aversive parenting. These relations held when controlling for socioeconomic status, suggesting them to be fundamental processes.

These findings are consistent with current theories of parenting, cognitive theories of depression, and current research in parenting and depression. They extend the current theoretical and empirical base of knowledge to sharpen the focus on dysfunctional parenting in current theoretical accounts, thereby highlighting the need to expand our models to account for parental positive affective behaviours. Further, they clarify different process mechanisms for distal and proximal depression in affecting aversive parenting, identifying contemporaneous depression as a direct intervention target. Finally, they provide a focus on maternal ratings of child problem behaviour as a salient influence in aversive parenting, thereby challenging parenting interventions to address such cognitive components. Limitations to the present findings, future directions for research, and further issues for theory, measurement, and clinical practice are discussed.

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CHAPTER I - INTRODUCTION

Purpose and Overview

Parenting is a complex cognitive, emotional, and behavioural task. The challenges are part of its immense reward potential as well as part of its strain on daily functioning. One factor which can play a role in the disruption of parental functioning is maternal depression. Mothers seem particularly vulnerable to depression. About 10% of mothers experience clinical depression during the postpartum period (Campbell & Cohn, 1991). Non-working mothers of preschool children seem most vulnerable with rates for major depression reaching as high as 40% (Brown & Harris, 1978). A multi-state survey in the United States found that 30% of adults report having experienced feeling sad or blue for at least 2 weeks over a year (Regier, Myers, & Kraemer, 1985). Despite the low prevalence rate of major depression (e.g., 2.7%, Weissman, Bruce, Leaf, Florio, & Holzer, 1991), depressive symptoms may be common in mothers.

The nature of disruption to maternal behaviour seems to be an extension of the symptomatology. Negativity and withdrawal, as features of depression, challenges the delivery of competent parenting, characterized by positiveness, warmth, and involvement (Downey & Coyne, 1990). Multiple parenting domains potentially adversely affected by maternal depression include the emotional climate of the home, childrearing attitudes, attributional style, disciplinary practices, and modeling of social skills

(Zahn-Waxler, Iannotti, Cummings, & Denham, 1990).

The last decade has witnessed a concerted effort to understand the impact of maternal depression on maternal behaviour. A review of this literature concluded that parenting deficits can be characterized generally by an increased aversive and decreased positive parenting style (Downey & Coyne, 1990). However, research into the mechanisms underlying the maternal depression - dysfunctional parenting link have been notably absent, leaving this work in somewhat of a theoretical vacuum. This is in spite of some very good theoretical "leads" from adult depression research and current models of parenting. One consistent theoretical theme to emerge from these efforts is the importance of cognitive mediation as a means by which depression impacts upon maternal behaviour. Cognitive mediation refers to a range of elements in information processing, from perception to interpretation to response monitoring, whereby external events are given relevance via internal processes, which in turn produces an external event - the parental behavioral response. Interestingly, a robust association has been established between maternal depression and maternal ratings of child problem behaviour (Richters, 1992). However, to date, maternal perceptions have not been assessed as a process mechanism in parenting.

Another "lead" provided by the adult depression research is found in the postulation of a diathesis-stress

model of depression, common to the major theories of depression. While the specifics vary from theory to theory, the individual is regarded as having a predisposition to depression, activated by their heightened reactivity to stress events (Barnett & Gotlib, 1988). However, as it relates to parenting, very few studies have examined the interplay between depression and stress variables in an effort to establish whether contextual stress exacerbates the negative effects of maternal depression on parenting. Further, research has not addressed such potential mechanisms simultaneously over time in an effort to address their relative importance or duration of influence. In this way, a greater appreciation for the context of maternal depression can be garnered, thereby illuminating a theoretical framework for understanding how maternal depression affects parental functioning.

The present study examined the role of self-reported maternal depressive symptomatology in the prediction of observed maternal behaviour towards the child. The potential mediation of this relationship by maternal perceptions was studied, as was the potential moderation of maternal depression by contextual stress. These relations were considered across time, in an effort to explore the relative impact of these variables, as measured proximally or distally to parenting.

The following introduction is divided into three sections. First, the theoretical background is presented with an overview of broad theoretical models and review of five current theories of parenting. This section concludes with a discussion of the primacy of parental characteristics as an influence in parental behaviour. Second, the empirical background for the current study is presented. The concept of maternal depression is discussed. Three pathways of influence of maternal depression, identified from the theoretical review, are considered for their empirical support. These are: the direct effect of maternal depression, the moderation of depression by contextual stress, and the mediation of depression by maternal perceptions of child problem behaviour. This section concludes with a discussion of proximal and distal effects of these variables. Finally, the third section presents the specific research questions addressed by the current study, along with predictions of results.

Section 1. Introduction to theories of parenting.

The question of why parents parent the way they do has been approached empirically in a progressively complex manner. Earlier research followed a simplistic, unidirectional model in which parental characteristics such as warmth-hostility were seen as paramount (e.g., Schaefer, 1959; Becker, 1964). This view was further expanded by a recognition of the importance of child effects on parents

(Bell & Chapman, 1986). More recently, researchers have emphasized the importance of the interplay among salient variables, questioning the utility of main effects models in advancing theoretical and clinical understandings (Greenberg, Speltz, & DeKlyen, 1993).

Ecological theory (Belsky, 1980; 1984; Bronfenbrenner, 1979) and developmental psychopathology (Achenbach, 1990; Cicchetti, 1984; 1989; 1990; Sroufe & Rutter, 1984) are the general theoretical orientations of the majority of recent work in parent-child interactions. Models derived from both these approaches identify links across time among family, parent, child, parent-child, social stress, and support variables. Both approaches conceptualize the parent and parenting within a broader context, identify parenting as multiply determined, emphasize the effect of early relationships upon subsequent relationships across the life span, and examine factors of relevance to both normal and dysfunctional parenting. They differ primarily in terms of particular emphases. Ecological theory emphasizes the importance of the larger social system on childrearing practices, including cultural, community, and society-level attitudes and "standards" towards parental conduct. Developmental psychopathology emphasizes the need to consider the developmental context of the child and to identify processes applicable to normal and atypical child development (Barnett, Manly, & Cicchetti, 1993).

Because of the breadth of these models, however, they may suggest little more than the hypothesis "all good things go together" (Waters, Posada, Crowell, & Lay, 1993, p. 220). In trying to capture the full complexity of parenting, they run the risk of explaining little. More specific hypotheses need to be tested so that these large models can be meaningfully refined (Waters et al., 1993). Part of the limitation of broad models lies in the fact that they do not identify the psychological processes by which the proposed array of variables converge in influencing outcome. A full understanding of the determinants of parenting cannot be achieved without considering the internal "mechanics" of the individuals involved - the series of internal events by which observable parental behaviour is brought about. A consideration of the parental belief and motivational systems as important variables of study has been noted as lacking (Abidin, 1992). However, recent models of parenting address these underlying cognitive and affective processes.

Contemporary models of parenting: Affective-cognitive emphases.

Five models of parenting are reviewed for their specification of psychological mechanisms that link various domains of influence to parenting. The interplay between cognition and affect, and their roles in directing parental behaviour, are focal points. Earlier models, like Patterson's coercion model (Patterson, 1982), do acknowledge

cognitive and affective processes, but do not include them in their model. Patterson (1982) suggests that maternal negative affect (e.g., depression, social stress) may make negative appraisals of the child more likely; however, appraisals are not treated as "process," instead being used to reflect "actual" child antisocial behaviour (e.g., Patterson, 1986). In contrast, the following models converge in identifying cognitive mediation, and maternal perception of child behaviour in particular, as an important process underlying parental behaviour.

Belsky's process model of parenting. Belsky's (1984) process model identifies the domains thought to influence both functional and dysfunctional parenting. A direct path from parental characteristics (labelled "personality") to parental behaviour is proposed, as well as indirect paths through the social network. However, Belsky's model falls short of explicating the process aspects. For example, in providing evidence supporting the direct parental characteristics-parenting path, Belsky mentions studies investigating more process-level constructs as locus of control and level of interpersonal trust. But his focus remains on more general characteristics, such as maternal depression and psychological maturity, without connecting these to process-level constructs. While Belsky (1984) does not cast the parent as a "thinking, planning, goal-oriented individual" (Abidin, 1992, p. 410), this work inspired a

closer examination of parental characteristics.

In Belsky's subsequent work, process-oriented issues are addressed. The expanded model of Belsky and Pensky (1988) incorporates concepts from Bowlby's attachment theory (Bowlby, 1969; 1973; 1980). Bowlby's "internal working model" construct was advanced as useful for viewing both the integration of a variety of parental internal processes (i.e., emotion, arousal, cognition systems) and the intergenerational transmission of parenting. As Belsky and Pensky (1988) do not provide a fully elaborated discussion, considering their work in conjunction with other theorists in attachment identifies a pathway from internal working models to parental cognitions to parental behaviour.

To define terms briefly, an internal working model is an affective-cognitive latent mental structure of relationships, developed from early caretaking experiences. Both sides of a relationship are learned, resulting in a model for the "self" and the "other." These models then function as guides for future interactions: they assist with the interpretation and anticipation of a partner's behaviour as well as with the selection and planning of one's own behaviour. As such, an internal working model represents both a relationship prototype and belief system (Waters et al., 1993).

Broadly categorized, childhood attachment models can either be secure or insecure in quality (Ainsworth, Blehar,

Waters, & Wall, 1978). A secure base relationship is one in which the child feels confident about the availability and responsiveness of the attachment figure; this confidence "frees" the child to play and explore in his/her environment at a distance from the attachment figure, periodically contacting her/him for information, safety, and reassurance as needed. In contrast, insecure attachment dictates that more attention will be devoted to the attachment system than to others, such as exploration, given the lack of confidence in the availability and responsiveness of the attachment figure. Behavioural strategies that have been identified in insecurely attached children include approach, resistance, and avoidance toward the attachment figure.

Attachment status in childhood does not have a one-to-one correspondence to parental attachment models. For example, individuals can revise their insecure models of self and attachment figures through the establishment of later secure relationships (e.g., individual therapy, marriage) (Pearson, Cohn, Cowan & Cowan, 1994). However, evidence supports continuity in attachment (Waters et al., 1993). Thus, it is suggested that working models promote the selection of environments and relationships so that these well-established childhood patterns can be reenacted and, once selected, these models guide the structuring of situations to further promote the expression of these patterns (Bowlby, 1973; Caspi & Elder, 1988).

A parent's own attachment models are thought to inform parental perceptions, expectations, and understanding of the parent-child relationship, so that parent-child interactions proceed in a manner consistent with attachment models (Crowell, O'Connor, Wollmers, Sprakin, & Rao, 1991). In the case of dysfunctional parenting, insecure parental models are implicated. In examining mothers at risk for abuse, Main and Goldwyn (1984) found that their children showed insecure behaviours. Further, these mothers tended to describe their own childhoods as including abuse and showed cognitive distortions of early experiences (e.g., had memory difficulties, displayed idealization of parents despite reports of abuse). This link between child maltreatment and adult insecure attachment models has been established. Crittenden, Partridge, and Claussen (1991) found child maltreatment to occur predominantly when both the mother and father had insecure attachment models. When both parents had secure attachment models or when there was an insecure, secure pairing (i.e., one parent scored as secure, the other as insecure), abuse was dramatically less prevalent. Other researchers confirm the role of maternal insecure models of attachment in less responsive, less structured, and less warm parenting (e.g., Cohn, Cowan, Cowan, & Pearson, 1992; Crowell & Feldman, 1988; Crowell et al., 1991).

Belsky and Pensky (1988) describe the way parental attachment models influence parenting in terms of their

impact on information processing. They stress the "active role of the individual in interpreting the experienced world" (p. 199), as a means whereby situations are cognitively structured (or re-structured) to fit with existing internal working models. In this way, working models promote the processing of model-consistent information; model-inconsistent information will tend to be disregarded or reinterpreted. In terms of process, Bowlby (1980) identifies perceptual exclusion as a mechanism whereby the saliency of events determines their likelihood of being encoded. When classes of information are excluded from perception (e.g., positive child behaviour), a systematic perceptual bias would be considered to be operative (e.g., perceptions of negative child behaviour).

Greenberg et al. (1993) discuss the negative cognitive bias of mothers with insecure models of attachment. They suggest that negative expectations of the "other," included in the insecure models of the mother, may translate to parent-child interactions as expectations that the child will behave problematically, even antagonistically. Such negative perceptions of the child would be fostered further by such mothers having complementary models of the "self" as unlovable and incompetent. In parent-child interaction, this "self" model may translate into feelings of parental incompetence and dissatisfaction in the parenting role. These feelings of low parental worth may alter the way in

which a parent experiences normative child affect (e.g., distress, anger) and behaviour (e.g., attempts to establish independence), such that misinterpretations of normative behaviour result in perceptions of child behaviour as problematic.

Crittenden (1988) identified the manner in which internal models seem to be utilized by abusive mothers. Physically abusive mothers seem to operate with a single internal representational model for all relationships (i.e., child, adult intimates). A common feature seemed to be a negative view of the other, specifically in terms of being seen as engaging in competitive power struggles with the mother. This work suggests that one important way internal working models influence parenting is in the way they impact on information processing and, in the case of severely dysfunctional parenting, this seems to be rigidly applied.

An experimental example of cognitive interpretation as a function of attachment classification is found in a study by Lay, Waters, and Posada (1993), as cited by Waters et al. (1993). These authors gave preschoolers videotaped vignettes which varied on whether an attachment figure was or was not present in the vignette. Differences in children's responses to affectively negative vignettes were found as a function of attachment status: insecure children were more likely to give paradoxical responses to negative vignettes with the mother figure included than were secure

children. An example of a negative vignette would be a mother refusing to look at the child's drawing because she was too busy. An illustrative paradoxical reply was a child saying this would make him/her feel happy as he/she would then watch TV, thereby enabling the mother to work, and then the mother would be happy. Securely attached children also gave "paradoxical" responses, but primarily in response to affectively negative vignettes without the mother present. These findings were viewed as suggesting that insecurely attached children are sensitive to conditions of threat to attachment and, consequently, work at cognitively transforming the situation (in the example, from "bad" to "good"). Such "misinterpretation" is useful because direct bids to the mother have historically proven unfruitful, aversive, and generally not an option for the insecurely attached child. In contrast, securely attached children have a history and a conceptualization of the mother/attachment figure as being available, responsive, and sensitive to their needs. As a consequence, they would be less likely to perceive threat in the negative scenario with the mother; further, any negative affect could be handled by direct approaches to the mother. The securely attached children, then, were in less of a need to invoke cognitive transformations in the parent-child interactional context.

In sum, while Belsky and Pensky (1988) identify cognitive mediation guided by internal working models as an

important determinant of parenting, others have detailed maternal perception of child behaviour as an intermediary step in the link from a parent's insecure attachment models to dysfunctional parenting.

MacKinnon, Lamb, Belsky, and Baum's affective-cognitive model of mother-child aggression. MacKinnon et al. (1990) present a model focusing on negative cognitive biases as process mechanisms of aggressive maternal behavior. They argue that fundamental to coercive mother-child interactions is both the tendency to focus on negative behaviour and the tendency to erroneously attribute negative intent to the other's behaviour. They identify that "when an individual's attributions or perceptions are negatively biased, she or he is predisposed to behave more negatively and, thus, is more likely to have more aggressive and coercive interactions" (p. 1). Differences between perceptions and attributions are not detailed.

It is further proposed that cognitive biases are exacerbated by conditions of contextual stress. MacKinnon et al. specify maternal depression as the most likely parental characteristic that would promote biased information processing. These authors presume that under stress, a mother experiences a heightened sense of vulnerability and, as a result, is increasingly "defensive," displaying such behaviours as increased vigilance. Unfortunately, this aspect of their model is not fully

elaborated. For example, it is not clear what stressed mothers are vigilant about. However, a reasonable extension of their argument would be that such mothers may have a heightened reactivity to and lowered threshold for negative events, perceived as potential threats. A negative perceptual bias, then, would be considered a function of selective attention to negative events.

To summarize, MacKinnon et al. (1990) posit negative perceptual and interpretive biases as crucial processes underlying negative maternal and child behaviour. In identifying the type of information-processing biases, these authors provide a "missing link" to Belsky's (1984) process model focusing on the direct path from negative attributes of the parent, like maternal depression, to parental behaviour.

Wahler and Dumas' interbehavioral model of dysfunctional parenting. In adopting an interbehavioural perspective, Wahler and Dumas (1989) acknowledge the "system" of context in parenting. Each stimulus-response connection occurs within a context comprised of the child, spouse, extended family, friends and the larger social environment. In addressing dysfunctional parenting, Wahler and Dumas focus on the role of the stressed and multistressed mother, defined so in terms of experiencing such "stressors" as maternal depression, chronic economic stress, and social stress from intimate partners, family, friends, and work.

They advance the notion that dysfunctional mothering is both a behavioural and an attentional deficit.

With respect to behaviour, they postulate that the stressed mother has a restricted "response class," viewed as a trait-like behavioural style. A response class is a clustering of observable maternal behaviours. For example, an aversive response class would include noncompliance, argument, criticism, and sarcasm; when one of these occur, the others are also more likely. The restricted response class of the stressed mother is a function of her tendency to make response-response links across the various contexts, including stimuli from the child, partner, friend etc. In contrast, the nonstressed mother has more differentiated responses, tied to each distinct context and stimulus.

To give an example, the stressed mother would display the same response - aversive - to stimuli from the spouse, child, friend, and work. In contrast, the nonstressed mother would be better at recognizing differing contingencies that would allow her greater behavioural flexibility, beyond a predominantly aversive response style (e.g., the child is behaving badly because he is ill etc.). The nonstressed mother, then, is more responsive to proximal cues than the stressed mother. Thus, one outcome of a restricted response class is dysfunctional parenting.

The generative mechanism accounting for the contextual stress-dysfunctional parenting association is a stress-

induced narrowing of attention. As a consequence of stress (i.e., maternal depression, social stress, etc.), there is a reduction in "surveillance" of external events, with surveillance defined as the ability to appraise the total stimulus picture and detect variations in it. One important outcome of this attention deficit is the inaccurate or "faulty" maternal perception of child maladjustment. These authors suggest that the stressed mother makes global, reductionistic estimations of child behaviour, displaying a "good-bad" bias in evaluating child behaviour. The heightened aversive parenting of stressed mothers is understood as the mother's tendency towards seeing many instances of child behaviour (aversive, neutral, and positive) along similar, negative lines. Thus, the aversive parenting of the stressed mother is a function of matching maternal responses to the perceived aversive child behaviour. In contrast, the more balanced, positive parenting of the nonstressed mother is a function of being a "field independent" observer, whose surveillance of child behaviour is not affected by contextual setting events.

To summarize Wahler and Dumas' position, attending to the full range of child cues and monitoring child behaviour is significantly compromised by the reduced attentional capacities under conditions of stress. This results in negative maternal perceptions of child behaviour and subsequent negative maternal behaviour toward the child.

Wahler (1990) strongly emphasizes the importance of maternal perceptions in accounting for reciprocal mother-child coerciveness, labelled the "maternal perception thesis." Wahler asserts that stressed mothers are particularly vulnerable to reactive parenting, given their perceptual biases. Because a stressed mother's perceptions of the child are informed by her long-term interactional history with the child and by her judgments about other interactants in her environment, she is less perceptive of the ongoing, proximal stream of child behaviour. Amidst this chaos and confusion, conflict ensues whereby the mother is more likely to "follow the child's lead" into increasingly coercive interchanges. Thus, the mother's clouding of her perceptual perspective by her preoccupation with contextual events is advanced as a central process underlying reciprocal coercion.

Dix' affective model of parenting. Dix (1991) identifies parental emotions as central to both dysfunctional and effective parenting. Three sets of processes are proposed: activation, engagement, and regulation of parental affect.

Activation processes refer to cognitions that precipitate emotion. A parent's appraisal of child behaviour includes appraisals of intentionality and control, and is believed to differentially activate parental emotion. An appraisal of negative child intent is thought to activate parental anger, and an appraisal of low parental control is

thought to activate dysphoria. Thus, negative appraisals result in the parent experiencing negative emotions.

Once activated, emotions then influence engagement processes, which describe a set of emotion-specific events, characterized by changes in cognition, motivation, and behaviour. In other words, the activation of negative emotion "primes" parents for a related set of negatively-biased parenting processes. One such biased process is labelled the "cognitive distortion hypothesis," to denote the increased likelihood of negatively biased expectations, perceptions, evaluations, attributions of intent, and attributions of control or responsibility about child behaviour as a function of activated negative emotion. Considering activation and engagement processes, a central tenet in Dix' model is reciprocal causation: negative appraisals of child behaviour activates negative parental emotions; negative parental emotions make negative perceptions of the child more likely.

Also, the presence of negative parental emotions affects the motivational system. Parents try to reduce this aversive emotional state, often with behaviours that interfere with sensitivity to children's need and perspectives, i.e., aversive parenting. Dysfunctional parenting is further promoted when a parent has poor control or regulation of negative emotions.

By considering studies on the dysfunctional parenting of

abusive mothers, depressed mothers, and mothers of aggressive boys, Dix underscores the overlap among these different streams of research. Labelling these mothers as "distressed," Dix suggests that they are more likely to have negative "cognitive sets" about their child's behaviour which, once established, can become more generalized to the child. Dix provides a normative reference for this perceptual bias in noting that studies show that when community mothers appraise child misconduct as intended, the child's behaviour tends to be viewed as reflective of negative personality dispositions. Dix places this cognitive bias in the context of an overall pattern: "distressed parents experience high levels of negative emotion because they select plans and have expectations children are likely to violate, perceive violations as caused by negative intentions and dispositions in their children, and infer that they have little control...with children" (p.13). Further, as a function of being overwhelmed by immediate tasks, distressed mothers are less likely to activate the child-oriented emotions that normally motivate effective parenting, such as empathy, worry, joy, or pride. Thus, as a result of increased negative emotion and the relative lack of positive emotion, distressed parents opt for short-term goal attainment, relying on aversive, power-assertive strategies.

To summarize, Dix proposes difficulties in the

activation, engagement, and regulation of parental affect as underlying dysfunctional parenting, emphasizing the interplay of parental emotion and cognition. He identifies one pathway as moving from negative parental affects, such as depression, to distortions in parental cognitive processes, including perception of child problem behaviour, to dysfunctional parenting.

Milner's social information processing model of abusive parenting.

Milner (1993) accords parental cognition a central role in his model of physically abusive parenting. He posits a four stage model of social-information processing: (1) perception of child behaviour, (2) interpretation, evaluation, and expectations of behaviour, (3) information integration and response selection, and (4) response implementation and monitoring. Cognitive mediation is the crux of Milner's model: the cognitive activities at one or more of the first three stages are thought to mediate events at the later behavioural response stage.

In contrast to other models, Milner clarifies that perception is a precursor to and, hence, differentiated from attribution and expectation of child behaviour. Abusive parents are thought to be less attentive to child behaviour and, further, are considered to be "faulty discriminators." For example, the finding that abusive mothers are equally highly reactive to a crying and smiling infant has been

interpreted as suggesting the abusive parent perceives the child as an aversive stimulus, failing to perceive accurately the distinct features of child behaviour.

Further, Milner postulates that the personal "distress" of abusive mothers, from both child and non-child related events, decreases their perceptual abilities, such that greater inaccuracy in child-related perceptions results. He cites maternal depression in abusive mothers as an important factor in accounting for a negative bias in abuse-relevant cognitive activities. For example, a lower threshold for perceived child misbehaviour is suggested to be a function of depressive symptomatology.

The importance of maternal perception of child behaviour is indicated in Milner's proposing a direct path from perception to abusive parenting, via "automatic processing." That is, seeing a child's behaviour as undesirable could initiate a rapid cognitive sequence which ends in abusive parental behaviour. Automatic processing is believed to occur outside of conscious awareness, involve low demands on attention, is difficult to modify or suppress, and generally proceeds to completion. Hence, automatic processing would likely be invoked under the low attention condition presumed present in abusive parents. Milner notes that such rapid processing could account for the "typology" of parenting of abusive parents: immediate, rapid, and explosive parental reactions and a lack of consideration of mitigating details

about the child. However, in considering the limited empirical literature, Milner notes that no clear evidence exists to show that abusive parents a) misperceive child behaviour (stage 1 perceptual deficit) or b) accurately perceive behaviour, but make different evaluations and interpretations (stage 2 interpretive deficit).

In accounting for abusive rather than aversive parental behaviour, Milner places special emphasis on the negative evaluations of child behaviour, particularly, the parents estimation of "wrongness." That is, an abusive parent would not only perceive child problem behaviour, attribute responsibility and negative intent to the child, but would also evaluate the behaviour as "very wrong" in order to justify severe parental disciplinary actions.

To summarize, Milner adopts a social-information processing approach to abusive parenting. He identifies cognitive mediation as the central process underlying abusive parenting, underscoring the importance of perception of child problem behaviour. The perceptual deficits of abusive mothers occur as a function of reduced attention to the full range of child behaviour and reduced accuracy in perceiving child behaviour. While Milner applies information-processing models to abusive parenting, it would seem extendable to milder forms of dysfunctional parenting.

Summary of cognitive-affective models of parenting.

Taken together, the above five models coincide in

identifying cognitive mediation as an important process mechanism underlying parental behaviour. In many of these models, this process is further delineated into discrete cognitive biases, with all models identifying maternal perception of child behaviour. Further, such cognitive processes are seen as the generative mechanism underlying the association of endogenous or trait-like maternal characteristics, maternal psychological functioning, and maternal behaviour. Specifically, maternal depression is cited in several models as a parental characteristic in which such cognitive biases may be most pronounced. Contextual factors, such as social stress, are also noted as potential exacerbators of biased cognitive processes. Finally, the cognitive biases in some of these models are proposed to increase as the level of dysfunctional parenting increases, with abusive parents cited as displaying a wider range of biased cognitive processes. Given the trend in many of these models to group various maternal "stress" events together, such as depression, socioeconomic disadvantage, and social stress, one issue which remains is the relative importance of these domains of influence.

Primacy of parental characteristics as determinants of parenting.

In accounting for parental behaviour, primacy has been accorded to parental characteristics. Belsky (1984) accounts for its high level of importance by identifying the

multiple pathways through which parental characteristics exert their effects on parenting, with maternal depression cited as the most extensively studied characteristic of "personality" (Belsky & Pensky, 1988). This trait-like interpretation is consistent with the finding that the best predictor of future depression is past depression (e.g., Andrews, 1981; Billings & Moos, 1982). Certainly, the possibility of depression acting as both an indicator of psychological functioning and personality would identify it as an important parental variable.

While Belsky (1984) identifies the indirect effect of parental personality on parenting as mediated by the social context, others have included nonsocial events, such as health and daily hassles as contextual factors (e.g., Patterson, 1982). Bronfenbrenner (1986) emphasizes parental contributions to the social context: "the personal characteristics of parents, especially fathers, are of no less - and perhaps even greater - importance than those of the child in determining the positive or negative impact of the external environment on family processes and their developmental outcomes" (p. 725). He argues for the need to examine interactive effects of the social context. Thus, the interplay of the social context with parental characteristics could follow a moderator (interactional) or a mediator (indirect pathway) model as Belsky (1984) suggests.

Considering the theoretical approaches to the determinants of parenting, it is clear that parental psychological functioning is an important contributor to why parents parent the way they do. In particular, maternal depression emerges as a pre-eminent parental characteristic. One important aspect of maternal depression is the nature of its influence when taking into account various conditions of contextual stress. Since no study to date has examined both maternal depression and social stress simultaneously in light of direct and indirect pathways of influence, this area of parenting research would seem an important point of integration for our understanding of the interpersonal context of maternal depression.

Section 2. The present study: Maternal depression and parenting behaviour.

As highlighted by the above models of parenting, maternal depression emerges as an important parental characteristic. The present study focuses on the influence of maternal depression on parenting. Before presenting the current study's model of parenting, a discussion of the phenomenon of maternal depression will be presented.

The phenomenon of maternal depression.

The experience of depression is a variable combination of affects and affective-cognitive interactions (Izard, 1991). Maternal depression has been distinguished along the lines of maternity "blues" (common, transient sad affect

following birth of a child), post-partum "psychoses" (rare depressive disorders with severe disturbances in thinking following the birth of a child), and maternal "depression," with onset irrespective of parenting status (Puckering, 1989). However, most researchers discuss maternal depression more broadly, in terms of its conceptualization as a categorical or continuous variable (Coyne, 1994; Downey & Coyne, 1990; Richters, 1992).

As a dichotomous variable, "clinical depression" is indexed along an interview-based checklist of symptoms for which specific criteria have been satisfied, such as detailed by the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 1980) or Research Diagnostic Criteria for a Select Group of Functional Disorders (RDC; Spitzer, Endicott, & Robins, 1978). For example, the DSM-III-R (DSM Third edition) requires either depressed mood or markedly diminished interest or pleasure in activities, nearly every day, for two weeks. In addition, a total of four other symptoms must be present for the two weeks, from a list including: weight loss or gain, insomnia or excessive sleep, diminished ability to concentrate, fatigue or loss of energy, feelings of worthlessness or inappropriate guilt, psychomotor agitation or retardation, and suicidal ideation or a suicide plan or attempt (for details, see Appendix A). Although the criteria list a two week duration of

depression, Coyne (1994) cites evidence showing that most depressed persons seeking psychiatric treatment have depressions lasting 6 to 9 months and experience several episodes in their lifetime. Downey and Coyne (1990) summarize the emerging view of clinical or diagnosable depression as one of heterogeneity in symptom presentation and variability in course but, more importantly, as a recurrent, episodic disorder with a range of residual difficulties. That is, clinical depression is distinguished from other definitional approaches by its chronic nature and significant disruption to functioning, even when symptoms have subsided.

As a continuous variable, maternal depression is indexed along a self-rating checklist of depressive symptoms. Although cut-off scores are established to indicate severity in symptoms, depression classified in this way may reflect transient and mild depression, rather than clinical depression (Coyne, 1994). This may be a function of self-report measures tapping depressed mood to the relative lack of the other primary symptom of anhedonia, which can occur without dysphoric mood (Rehm, 1988). Further, as Coyne (1994) points out, one can achieve a score exceeding clinical cut-offs on self-report depression inventories by highly endorsing very few items, some of which may tap the same symptom domain, or by endorsing many items marginally.

Consistent with the notion that sadness is the most

ubiquitous negative emotion, Coyne (1994) notes that depression has been called "the common cold of psychopathology," as most individuals have experienced some depressive symptoms. The common ground of both categorical and continuous approaches to depression is their focus on a comparable range in symptomatology, with clinical depression dictating a specified minimum number and duration of symptoms. Focusing on the reactivity of negative mood in nonclinical depression, Coyne (1994) advocates the use of the term "distress," reserving "depression" for the clinical manifestation of symptoms. He notes that chronic stressors, like poverty, are associated with distress rather than diagnosable depression. Further, he suggests that psychological distress is a legitimate topic of study, especially given its higher prevalence; however, studies of distress should be differentiated from clinical depression.

Although the DSM-III-R criteria provide a picture of depressive symptomatology, specific symptom lists vary from one authority to another. Rehm (1988) raises the question of whether there are "necessary or sufficient" conditions for a diagnosis of depression, noting that only a symptom of "self-devaluation" was represented across depression scales. Rehm distinguishes depressive signs from symptoms, with the former being necessary for diagnosable depression and the latter overlapping with many other forms of psychopathology. In medical nomenclature, a sign refers to an objective

finding (e.g., examination by physician) with a specific meaning; a symptom is thought to be broader than a sign, referring to the subjective report or complaint (Trzepacz & Baker, 1993). Rehm (1988) lists depressive signs as including sleep, eating, sexual, work, and suicidal disturbances. This concurs with the view that decreased sexuality, decreased physical well-being, and increased fatigue are immediate, observable effects of depression (Izard, 1991).

Rehm (1988) lists depressive symptoms as including sad affect, cognitive distortions, changes in cognitive functioning, overt motor-behavioral excesses and deficits, somatic symptoms, and interpersonal disturbances. However, often depressed or sad mood is singled out as a central feature of maternal depression (e.g., Field, 1992; Rutter, 1990). Izard (1991) reports on a series of studies which identify a pattern of discrete emotions that are associated with the experience of depression. Sadness was shown to be the key emotion. Other affects of depression included anger, disgust, contempt, fear, guilt, and shame/shyness. The "hostility triad" (anger, disgust, and contempt) in depression was found to be expressed towards both the self and others. Izard notes that outer-directed hostility may serve an adaptive function by keeping inner-directed hostility from mounting higher, thereby serving as a check against suicidal behaviour. Also, it may serve to allay

some of the guilt and fear. Others have suggested that irritability is an important symptom of maternal depression (e.g., Cox, Puckering, Pound & Mills, 1987) and that such irritability is likely to be directed toward the child (Puckering, 1989). To summarize, the discrete emotions approach to depression identifies sadness as a primary affect and hostility as a secondary affect. This has led to the suggestion that sadness-anger may be a fundamental pattern in depression (Izard, 1991).

The impression of depression that emerges is that diagnosable depression implies a clustering of symptoms, albeit a highly variable one, found in individuals that show impaired functioning, even in the absence of clear symptom expression. Other researchers have labelled this group "depression-prone" (e.g., Hartlage, Alloy, Vasquez, & Dykman, 1993) to refer to a trait-like cognitive vulnerability to depression. Thus, at any given time, this group may be more or less depressed or distressed, using the term distress to reflect state depressive symptomatology and depression to reflect the diagnosable entity. However, this current view has not met with uniform acceptance.

Izard (1991) found the pattern of fundamental emotions in depression to be essentially the same when considering experimental studies of subjects who recalled or imagined depression, hospitalized depressives, and depression in children, leading to the conclusion that "normal and

pathological depression are quite similar" (p.227). This would argue for a continuum view of the term depression, rather than separating out potential categories, such as distress, depressed mood, clinical depression, trait depressive personality etc.

Further support for the use of the term depression is suggested when one considers that most depressed persons either do not obtain treatment or are treated in the community (Meyers & Weissman, 1980), thereby raising questions about the meaning of clinical depression as it is encountered in psychiatric treatment centres. It has been noted that individual differences which may account for presentation to research-based tertiary care clinics are not well-understood, with a potential resulting bias in terms of greater severity, chronicity, and treatment history (Downey & Coyne, 1990). However, severity, chronicity, and history are the main arguments Coyne (1994) uses to support differentiating diagnosable depression from other definitional approaches.

When considering interactional studies of depressed mothers, substantive differences in parenting deficits do not emerge as a function of a continuous versus categorical conceptualization of depression (Downey & Coyne, 1990). While this has led to the postulation that a third variable such as family stress, and not maternal depression, is the fundamental variable related to observed parenting deficits

(Downey & Coyne, 1990), an alternative explanation is that there is some common effect of depression on parenting, which is not dependent upon severity levels.

The current study's model of maternal depression and parenting.

The current study addresses the influence of maternal depression on parenting by considering its direct and indirect effects. Following Belsky's (1984) formulation, one would predict parental depression to influence parental behaviour directly. Also, parental depression would be predicted to influence parental behaviour indirectly, as a function of how it shapes the social context. As noted, depression may be mediated or moderated by social variables. Further, contemporary models identify the importance of cognitive mediation when considering the path from parental characteristics (e.g., maternal depression) to parenting behaviour. In particular, perceptions of the child have been identified as important. To summarize, then, three paths of influence follow from models of parenting: (1) the direct effect of maternal depression, (2) the indirect effect of maternal depression through the social context (i.e., mediation versus moderation by social support/stress) and (3) the indirect effect of maternal depression via its impact on cognitive processing, such as maternal perception of child problem behaviour. The literature relevant to the these paths of influence will be considered subsequently.

Pathway I: Direct effects of maternal depression.

Depression has been postulated as both a cause and effect of poor parenting. A consistently identified aspect of the depression-parenting link is parental aversiveness. Critical and disapproving parental behaviours have been theorized as contributing to the etiology of depressive cognitions (Beck, Rush, Shaw & Emery, 1979) and, in particular, to the "introjective" or self-critical type of depression (Blatt & Homann, 1992). Reviews of retrospective research with clinically depressed subjects consistently show decreased parental care, involvement, and increased hostility and punitiveness in the depressed subjects' families of origin (for a review, see Burbach & Borduin, 1986). This association between recalled aversive parenting in childhood and adult depression remains when taking into account the potential recall bias of depressed subjects (e.g., Gotlib, Mount, Cordy, & Whiffen, 1988).

The depression-aversive parenting association is also found when considering the parenting of depressed mothers. Early work on maternal depression and parenting (e.g., Orvaschel, Weissman, & Kidd, 1980; Weissman & Paykel, 1974) suggested that the home environments of depressed mothers were characterized by reduced involvement with their children, communication difficulties, and conflictual parent-child relations. While these studies inspired interest in depression and parenting, their results

were limited by the reliance on semi-structured interviews of the mothers. Coyne, Kahn, and Gotlib (1987) argued for a compelling need to study family interactions of depressed parents, given the virtual lack of observational studies at that time. In the last decade, there has been many efforts to understand depression and parenting, primarily in mothers, using both clinical and community samples.

In a review of these observational studies, Downey and Coyne (1990) identify 6 studies sampling clinical depression (i.e., clinician or researcher diagnosis of depressive disorder, either following psychiatric or established research criteria) and 9 studies sampling depressive symptomatology (i.e., maternal self-report on depression inventory). Observed interactions varied from lengths of 3 minutes to 120 minutes, from naturalistic home observation to structured clinic observation, and from 2 days to 16 years of child age. Despite such divergent characteristics, similar results emerged across studies, suggesting that maternal depression reduces the level of effort available to mothers for interacting with their child. From mild to clinical depression, depression in mothers was associated with constricted affective expressions, including more flat, sad and irritable affect, increased child-directed aversiveness, seen especially in their use of coercive rather than cooperative control strategies, and less activity, less positiveness, and less rapid response to

the child.

The general conclusion of increased aversiveness and decreased positiveness in the parenting of depressed mothers is supported by other reviews (e.g., Field, 1992; Puckering, 1989). Radke-Yarrow and Zahn-Waxler (1990) listed specific parenting deficits of depressed versus nondepressed mothers, supported in varying degrees by empirical studies. Depressed mothers have been found to be more hostile, less consistent in affection and less affectionate, less communicative, less skillful in management, more likely to avoid punishment and discipline, physically more punitive, and more negative, unresponsive, and asynchronous. Among this list, it seems that negative affect most reliably distinguishes depressed from non-depressed mothers. For example, based on 5 hours of observation of mothers and their toddlers, Radke-Yarrow, Nottelmann, Belmont, and Welsh (1993) found diagnosed depressed mothers spent about a quarter of the time expressing negative affect, as compared to 12% for controls; further, the more severely depressed mothers displayed significantly more negative affect than those less severely depressed. Specific negative affects to distinguish depressed from nondepressed groups included anxious-sad and downcast maternal affects.

Although child age and gender effects have generally not been noted, the nature of interactional difficulties of depressed mothers seem to differ from infants and toddlers

to preschoolers and later-aged children (Rutter, 1990). The parenting differences with infants tend to focus on decreased interaction levels, decreased "synchrony" or contingent responses, as well as increased flat and negative affect (e.g., Field et al., 1985; Field et al, 1988; Bettes, 1988). The deficits with later age children tend to focus on decreased general positive affect and increased punitiveness and negative affect (e.g., Webster-Stratton, 1988; Webster-Stratton & Hammond, 1988; Hops, Biglan, Arthur, Friedman, & Sherman, 1987).

These differences may reflect differences in assessment strategies, with mother-infant interactions measured over much shorter periods of time, sometimes minutes (e.g., Cohn et al., 1990) versus the multiple baseline procedures often used with older children (e.g., Panacionne & Wahler, 1986; Rogers & Forehand, 1983). Rutter (1990) expressed concern that, even for infants, the brief interactional period may be insufficient to capture a range of valid parental behaviours, especially considering the novelty of observations and the complexities in dyadic interactions. Alternatively, differences may be a function of different depressive phenomena (Blatt & Homann, 1992), with "dependent" depression viewed as more closely related to the dependency needs of very young children and "self-critical" depression viewed as more closely linked to the control and assertion of independence and individuality of toddlerhood

and beyond.

Recent research has examined parenting of adolescents, finding maternal depression associated with aversive parenting, for both self-reported (McLoyd, Jayaratne, Ceballo, & Borquez, 1994) and diagnosed (Tarullo, DeMulder, Martinez, and Radke-Yarrow, 1994) depression. For example, Tarullo et al. (1994) divided mothers into groups of those who met research criteria for clinical depression within the past month and those who had previously met criteria, but did not evidence depression in the past month. Based on a discussion task (10-15 min.), depressed mothers in recent episode were significantly more "critical/irritable" (i. e., negative affect, criticisms, disagreeing etc.) with their daughters than both well mothers and previously diagnosed mothers with no episode in the month. No differences were found for maternal "engagement" (i.e., sensitive to child cues, shows interest, open to discussion, less flat affect) between unipolar depressed and nondepressed mothers. Thus, a common parenting dysfunction in maternal depression across a wide range of child age is increased maternal aversiveness towards the child; however, this association may hold only when depression is recent.

This pattern of increased aversiveness and decreased positiveness is further supported by studies of other groups of challenged parents. Depression is a common correlate of physically abusive and neglecting mothers (Wolfe, 1985),

and mothers of children with attention deficit disorder (e.g., Cunningham, Benness, & Siegel, 1988), depression (e.g., Cole & Rehm, 1986), and conduct problems (e.g., Forehand & Brody, 1985). Maternal depression in these groups is associated with observed aversive parenting and, to a lesser extent, reduced maternal positiveness, thereby strengthening the argument that self-reported depressive symptomatology is linked to dysfunctional parenting.

Finally, it is noted that the presence of maternal depression does not inevitably result in parenting dysfunction. Several researchers have found among their depressed samples a fair degree of variability in observed parenting, with some depressed mothers interacting in a mixed aversive/positive style, some interacting in a predominantly positive style, and others interacting in a predominantly aversive style (e.g., Cox et al., 1987; Field, Healy, Goldstein, & Guthertz, 1990). Further, one study reported that mothers of 5-month old infants who scored zero on a self-report depression inventory received worse interactional ratings than did mothers who were high-scorers, suggesting that zero-scoring mothers may either be "faking good" on self-report questionnaire or are denying their depression (Field, Morrow, Healy, Foster, Adlestein, & Goldstein, 1991). Taken together, these studies suggest exceptions to the general pattern of increased aversiveness and decreased positiveness found in maternal depression.

Pathway II: Contextual stress - mediation or moderation of maternal depression?

In conceptualizing the relation between maternal depression and contextual stress, the central issue seems to be whether to consider contextual stress as a mediator or moderator. Baron and Kenny (1986) discuss the mediator-moderator distinction. They identify a mediator as a third variable through which the independent variable is thought to influence the dependent variable, thereby identifying how or why associations between the independent and dependent variables occur. Statistically, a mediated relationship is indicated when the relationship between the independent and dependent variable is significantly reduced as a function of removing the effects of the mediator variable. In contrast, a moderator is a third variable which qualifies the relationship between the independent and dependent variables, specifying when (or for whom) certain effects will hold by partitioning the independent variable into subgroups that identify domains of maximum relation to the dependent variable. Statistically, a moderated relationship is indicated when the crossproduct of the moderator and independent variable adds significant predictive power, beyond these variables entered singly. In practice, the mediator-moderator distinction may not always be clear; to add to the conceptual complexity, a mediated relationship may also involve moderator effects.

One consideration offered by Baron and Kenny is that testing for mediation requires the complete specification of an adequate causal model. Consequently, testing for moderator effects may be an appropriate starting point as such an analysis may then lead to the discovery of potential mediators. As noted earlier, there is no clear theoretical direction in identifying the social context as primarily a mediator or moderator of parental characteristics. Thus, in this absence, investigating its potential moderator function would be considered the appropriate starting place.

This approach is further bolstered by the finding that life events consistently show a modest association with depression (e.g., Hammen, Mayol, deMayo, & Marks, 1986) and moderators are expected to be less strongly correlated with predictors than are mediator variables (Baron & Kenny, 1986). Further, empirical studies of aversive parenting have found parental characteristics to yield low predictive power. For example, Patterson and Dishion (1988) found that only 7% (for mothers) and 13% (for fathers) of the variance in aversive behaviour towards the child was accounted for by parental characteristics. These authors advance the hypothesis that an interaction between parental characteristics and other factors, like contextual stress, may account more fully for parental behaviour.

Before considering the literature supporting a moderator conceptualization of social stress variables, it is

important to consider how contextual stress affects parenting directly, as testing for an interaction between maternal depression and social stress dictates testing first for each of these variables singly.

Direct effect of contextual stress.

Zussman (1980) postulates that parental stress leads to "minimal" or less effortful parenting, due to the competing cognitive activities associated with the stressor. As a result, aversive strategies are opted for by stressed parents because they are perceived to be more efficient in gaining rapid compliance. In other words, stressed parents may be focusing on more immediate parenting goals (e.g., stop the problem child behaviour now) rather than long-term goals (e.g., help the child learn the house rule).

Studies show a direct negative effect of contextual stress on parenting. Increased parental aversiveness and decreased positiveness have been associated with reported negative life events (Webster-Stratton, 1988; Weinraub & Wolf, 1983), socioeconomic disadvantage (Conger, McCarty, Yang, Lahey, & Kropp, 1984; Patterson & Forgatch, 1990), aversive social contacts and social isolation (Dumas, 1986; Wahler & Dumas, 1987) and low social support (Feiring, Fox, Jaskir & Lewis, 1987; Stevens, 1988; Unger & Wandersman, 1985; Weinraub & Wolf, 1983; Zarling, Hirsch, & Landry, 1988). Also, increased parental aversiveness has been found in laboratory analogue studies of parenting and stress

(Passman & Muinern, 1977; Vasta & Copitch, 1981; Zussman, 1980). Taken together, these studies show contextual stress as a direct contributor to dysfunctional parenting.

Contextual stress as a moderator variable.

Few studies have examined the interplay of contextual stress with other variables in predicting parental behaviour. In a study of socioeconomically disadvantaged mothers and their first-born children, Pianta, Sroufe, and Egeland (1989) found that mothers who showed less sensitivity towards their child than would be predicted from previous assessments had high life stress and rated their child as more behaviourally problematic. Similarly, Crockenberg (1981) found child anxious attachment was predicted by maternal unresponsiveness, but only in the context of low social support and a highly irritable baby. Crockenberg (1987) extended these findings to show that mothers exhibiting angry and punitive control of their toddlers were most likely to have low partner support and to have experienced rejection as a child. However, given that these mothers had their children in their teens, it is unclear as to how such results generalize to other parenting samples.

Using a low-risk sample (intact, working to middle class families), Belsky, Youngblade, and Pensky (1989) found that marital quality moderated the relationship between maternal childrearing history and current parenting. Maternal

negative affect and behaviour towards the child was predicted by a mother's history of rejection as a child, in the context of low marital quality. While support exists for a moderator approach to contextual stress, the moderator function of contextual stress as it relates to maternal depression in predicting parenting has not been addressed.

Pathway III: Cognitive mediation of maternal depression.

In examining the empirical support for cognitive mediation of maternal depression, three literatures are most germane. First is the literature on personality as it relates to cognitive processing and parental behaviour. Second is the literature derived from cognitive models of depression, where cognitive distortion is viewed as the core symptom of depression. Third is the maternal depression, perception of child behaviour, and parenting research.

I. Contributions from Personality Theory and Research.

Carson (1969) defines personality as a person's behavioural pattern that identifies him/her as an individual, making behaviour predictable. He cites Lewin (1935) to highlight personality's influence on perception. In applying Lewin's notions to interpersonal behaviour, Carson comments: "the behaviour of the two persons engaged in a typical dyadic interaction is determined by the dispositional tendencies inherent in each of them at the time and by their perceptions of their own and of each other's behaviour, as well as their perceptions of other

aspects of the situation - perceptions biased in turn by their dispositional tendencies. The accuracy of these perceptions ... range from complete veridicality to virtually complete illusion." (p.12). Thus, Carson emphasizes that personality, while it is conceived of as a fairly stable and enduring quality, is subject to proximal situational influences affecting behaviour via perceptions.

Recently, researchers in parenting have renewed interest in the role of the parents' personality features as contributors to parental functioning and, in particular, how they may be implicated in social information processing (e.g., Milner, 1993). Considering diagnosed maternal depression, Radke-Yarrow and Zahn-Waxler (1990) cite data identifying that 65% of mothers with an affective illness also have a personality disorder and 19% of control mothers have a personality disorder. Studies show that when the parent is diagnosed with affective and personality disorders, their children appear the most maladjusted (e.g., Rutter & Quinton, 1984). Rather than highlight a specific psychiatrically-diagnosed personality disorder, Rutter (1988; 1990) emphasizes aversiveness as a potential core construct. He notes that aversive personalities seem to exist in aversive contexts, citing the high frequency with which psychosocial stressors (marital discord, hassles, socioeconomic disadvantage) co-occur with depression. One aversive personality feature that has been noted for its

effect on cognitive processes is negative affectivity (NA).

Belsky and Pensky (1988) identify parental NA as important for understanding dysfunctional parenting. Watson and Clark (1984) describe NA and its counterpart, positive affectivity (PA), as two independent personality dimensions consistently found in factor analyses of personality inventories. NA is defined as the tendency towards anxiety, depression, hostility, impulsivity, self-consciousness, emotional instability, and poor ego-strength. PA is defined as the tendency towards interpersonal warmth, attachment, sociability, activity, and excitement-seeking. Depression is thought to reflect high NA and low PA.

In a review of the literature, Watson and Clark (1984) found that high NA is associated with a cognitive style characterized by a focus on negative aspects of themselves, others, and the environment. They suggest these negative perceptions by high NA persons are accurate rather than inflated. A study by Kaplan (1968) is cited as showing that low and middle NA subjects generally rated their peers too favourably, as compared to self-ratings. In contrast, the high NA group were the most consistent with self-ratings. Further, Watson (1988) identifies that NA is related to a vigilant cognitive mode, characterized by scanning the environment for negative information, tending to interpret ambiguous stimuli in a negative or threatening manner.

Other cognitive biases noted among high NA persons

include a tendency to blame others for negative events (Tennen & Affleck, 1990). The marital interaction literature reveals a consistent link between aversive interchanges, blaming one's partner for negative events, and angry affect towards that partner (Fincham, Bradbury, & Grych, 1990). Tennen and Affleck (1990) propose that other-blame interferes with adaptive coping as a result of restricting the range of behavioural responses, noting the omnipotence accorded to the other. Other-blame, then, allows for a restoration of some degree of control. Extended to parenting, theories of abuse include a parent's perceived lack of control as an important early step in the increasing abusive chain (e.g., Wolfe, 1987). Research shows that mothers with low perceptions of control exacerbate child misconduct by their overreactive and negative affective response to minor events (e.g., Bugental & Shennum, 1984).

In linking NA to interpersonal relations, high NA persons are more hostile, demanding, distant, and place a low priority on having "smooth" social interactions (Watson & Clark, 1984). Clark and Watson (1988) cite some evidence to suggest that NA individuals are more susceptible than PA persons to the immediate influence of stress, raising the possibility of moderation of NA personality by contextual stress. The type of stress events linked to NA were "punishment" events that were often relationship-related, e.g., arguments, hassles, concerns about relationships,

and health problems. The stress events associated with PA also included arguments and health problems, but included more "loss of reward" events as work-related concerns and being home alone with no activity.

Applied to parenting, these studies would suggest that high NA parents would be: a) more likely to experience depression and situational stress, b) more reactive to negative events, c) more likely to perceive negative child behaviour and see the child as "responsible" for negative events, d) less likely to view themselves as a causal factor in negative parent-child interactions, and e) respond more aversively to others. All of these elements would signify that the high NA parent would be expected to hold negative perceptions of child behaviour and, as a consequence, display a restricted, more aversive parental style.

Although the labels vary, there has been a focus on parental aversiveness as a dispositional trait. Most parent-child interaction research does not assess for psychiatric diagnosis, but rather measures negative parental personality characteristics. For example, Caspi and Elder (1988) label their trait "instability" to reflect an irritable, explosive, and tense interactional style. Based on a longitudinal community sample spanning four generations, these investigators found parental instability significantly predicted inept parenting (composite of punitive and lax parental behaviours) across generations,

with evidence supporting an indirect path through marital conflict in addition to the direct link. These authors concluded that "the relationship between unstable, problem behaviour and aversive social interaction is reciprocal in theory. Unstable personalities undermine supportive relationships with others, and weak ties are conducive to the expression of unstable tendencies" (p.236).

Working in a similar vein, Patterson and colleagues label their negative affective trait "antisocial personality," to reflect a lack of adherence to social norms and an aversive/hostile interactional style. Patterson (1982) postulates that antisocial characteristics in parents make them at increased risk for irritable-explosive interchanges with their children. Antisocial personality is defined by a multi-method approach to assessment including scores on a personality inventory, records of driving violations, and records of arrest. Parental antisocial trait was found to significantly predict aversive parenting and child antisocial behavior (e.g., Patterson & Dishion, 1988). Unfortunately, researchers of parental aversive personality have not studied its effect on cognitive processes in influencing parenting. Mash and Johnston (1990) identify an alternate approach to understanding negative perceptual biases in suggesting that they may flow from trait-like parental cognitive variables, such as conceptual tempo, psychological complexity, problem-solving and

reasoning capacity and overall intelligence.

II. Contributions from Beck's depression theory and depression research.

Cognitive distortions are viewed as the core symptom in Beck's cognitive model of depression (Beck 1972; 1976; Beck et al., 1979). These are products of information-processing guided by dysfunctional cognitive schemas. A schema is a stable cognitive pattern that simplifies the task of processing, owing to its provision of rules and structures to which incoming information can be applied. Thus, when confronted with an informational event, a matrix of schemas related to the event are "activated," serving as a guide for attending, interpreting, and integrating information, which in turn determines the person response. While schemas make processing more efficient, their reductionistic nature leaves open the possibility of cognitive errors. In depression, information is thought to be distorted to fit with pre-existing ideosyncratic dysfunctional schema. These schema are theorized as originating from early experiences, for example, attachment. Thus, depression is considered to be a function of a trait-like cognitive style, a "preferred" processing of negative environmental features (Beck, 1976).

Beck (1976) discusses the types of cognitive "errors" associated with depression. Depression favours "primitive" (inflexible and global) information-processing, thereby increasing the likelihood that "extreme, negative,

categorical, absolute, and judgmental" meanings (Beck et al., 1979, p. 14) will be attached to informational events, with an accompanying emotional response that is over-reactive and negative. Thus, the cognitive model of depression emphasizes the individual's stylistic interpretation of and reaction to events.

Beck et al. (1979) noted that with increased use, these ideosyncratic schemas become more readily accessed and a wider net of associations may result. Further noted was the presence of dysfunctional schemas across the range of depression. Milder depressives would be expected to display negative processing biases, although they retain some objectivity with which to view their own negative thinking. This objectivity would be expected to decrease as depression severity increased, with processing becoming more autonomous to the extent that the severely depressed individual becomes unresponsive to changing proximal events.

The literature on mood-congruent information-processing in depression supports the notion that depressed individuals display a preferential processing (i.e., more rapid encoding, better recall etc.) of negatively valenced information (see Hartlage et al., 1993; Matt, Vazquez, & Campbell, 1992, for reviews). Conclusions specific to level of depression were identified by Matt et al. (1992) in their review of mood-congruent memory research in normal nondepressed, "subclinically" depressed (i.e., self-reported

mild depression), "clinically" depressed (i.e., psychiatric diagnosis), experimentally-induced depressed, and experimentally-induced elated subjects. These authors concluded that nondepressed normal subjects display a pattern of memory performance characterized by the preferred recall of positive stimuli. In contrast, subclinically depressed subjects show a symmetric recall pattern, recalling positive and negative equally. Clinically and induced depressed subjects show an asymmetric recall pattern favoring negative material. Thus, in both mild and clinical depression, there is greater encoding and recall of negative information in comparison to nondepressed individuals.

Matt et al. link the positive recall bias of normal subjects to the adaptive role of overly optimistic perceptions in promoting attributes characteristic of mental health, for example, self-efficacy, ability to cope with stress etc. A parallel to parenting is the finding that nonproblem families display a positive attributional bias for child behaviour, such that child success is seen as due to internal, stable factors and child failure is seen as due to external, unstable factors (e.g., Dix & Grusec, 1985). Matt et al. interpret the balanced recall of subclinically depressed subjects in terms of "depressive realism" - a tendency to view aspects of the environment more realistically, with fewer perceptual and judgmental biases than nondepressed persons. The parallel here to parenting

are studies suggesting the negative perceptual bias of the depressed mother reflects depressive realism (e.g., Conrad & Hammen, 1989). Finally, Matt et al. interpret the superior recall of negative material by clinically depressed persons as a recall bias which may maintain clinical depression. The parallel to parenting is theory and research suggesting that the negative perceptual bias of depressed mothers reflect cognitive distortion (e.g., Dix, 1991).

To summarize Matt et al.'s conclusions, there is ample evidence that depression is associated with a negative internal dialogue, across mild and clinical levels of depression; such a dialogue seems readily extendable to maternal depression and negative perceptions of the child.

III. Maternal depression and perceptions of problem child behaviour.

Studies show that mothers who rate their children as behaviourally more problematic display more aversiveness towards their child and report elevated depression, than mothers who do not rate their children as such (e.g., Cunningham et al., 1988; Mash et al., 1983). It is equally well established that maternal depression, whether it is conceptualized as a continuous or categorical variable, is a significant predictor of maternal ratings of child behaviour (for a review, see Richters, 1992). Thus, there exist two streams of findings: (1) mothers who perceive their children as behaviourally problematic tend to report depressive

symptoms and tend towards aversive parenting and (2) depressed mothers tend to perceive their children as behaviourally problematic and tend towards aversive parenting. Surprisingly, these overlapping research trends have not been considered together to provide focus on the potential mediational role of maternal perceptions, despite the literature on cognitive effects of depression.

The importance of cognitive mediation to parenting has been acknowledged by interactional researchers (e.g., Mash & Johnston, 1990). Although maternal perceptions have not been tested as underlying depression and aversive parenting, a few studies have examined their mediator role. Conger et al., (1984) tested a model where ratings of child problems, among other factors, formed a construct mediating the effect of chronic socioeconomic stress on parenting. Although the unique contribution of perceptions was not evaluated, the mediating construct significantly contributed to the prediction of observed maternal behaviour, after the contribution due to chronic stress was partialled out. Meyer (1988) proposed a model in which perceptions of child difficultness mediated the impact of parental personality (emotionality, activity/achievement orientation) on parenting. Using structural equation modeling, a significant path from parental personality through perceptions of the child to parenting efficacy was found. However, this was not found for the interactional measure of parenting. This may

have been due to the limited nature of the interaction, i.e. a single, 30 minute observation coding child compliance and "quality of maternal assistance" in a laboratory clean-up task and small sample size. Although this limited empirical work encourages examination of the mediational role of parental perceptions, the strong theoretical support for the mediational hypothesis urges focused research attention.

A related issue is whether negative perceptions of child behaviour are specific to depression, or associated with other negative affective states (Hartlage et al., 1993). Studies of maternal distress arising from a variety of sources, such as life events, physical symptoms, and marital discord have found these factors to be associated with maternal reports of child maladjustment (Easterbrook & Emde, 1988; Hammen, Adrian, Gordon, Burge, Jaenick, & Hiroto, 1987; Webster-Stratton, 1988), raising the possibility of cognitive mediation of contextual stress. For example, Webster-Stratton (1988) reports significant correlations of comparable levels between mothers' scores on self-report inventories of depression, marital adjustment, parenting stress, and negative life events with both global inventories of child problem behaviour as well as inventories of "routine" child problem behaviour. This pattern of correlates was interpreted as suggesting that depressed or distressed mothers may have a lower threshold for child misbehaviour, which may cause them to see their

child as more deviant, and respond to them more negatively.

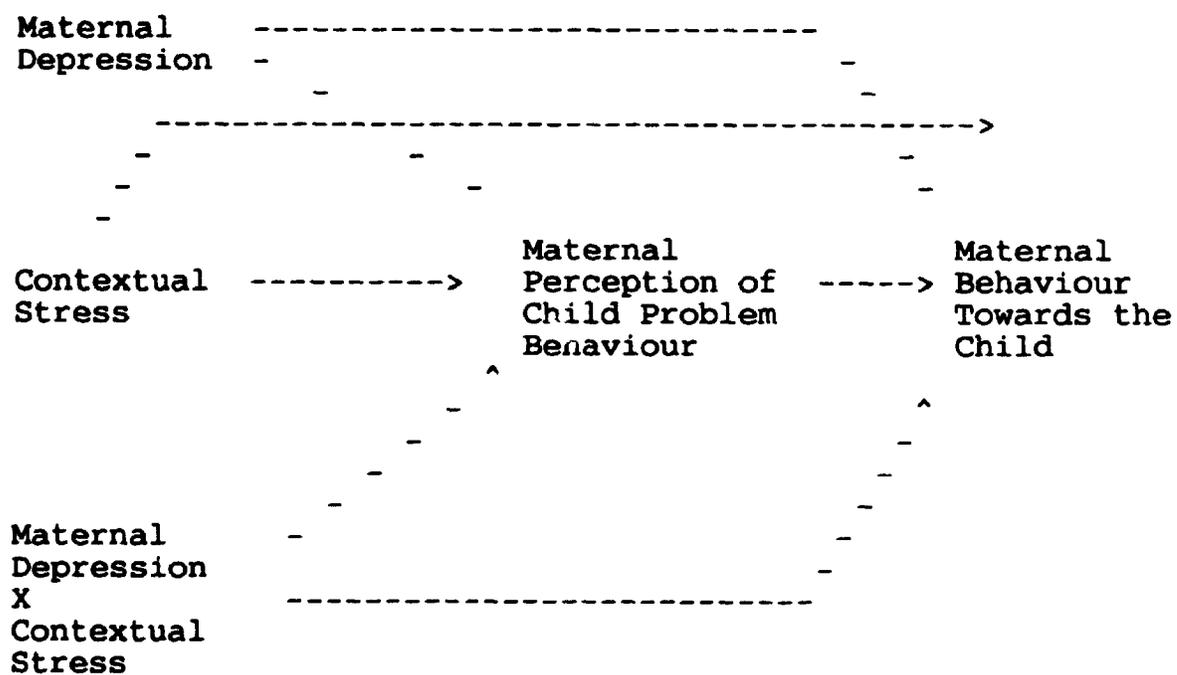
This association between maternal distress and perceptions of child problem behaviour is also found in analogue studies of parenting stress. For example, Middlebrook and Forehand (1985) varied the level of situational stress and type of child behaviour in a series of written vignettes. They found that neutral (nondeviant) child behaviour embedded in vignettes characterized by high stress (e.g., hassles) was rated more negatively than when these were embedded in low-stress contexts. This study suggests that contextual stress, like depression, may make negative perceptions of child behaviour more likely, at least with ambiguous or neutral child behaviours. Taken together, these studies highlight the importance of considering cognitive mediation by maternal perceptions for both maternal depression and contextual stress and, by extension, any exacerbating effects such as an interaction between maternal depression and contextual stress.

Towards a model of parental behaviour.

Following from the above theoretical and empirical literature on the determinants of parenting, a model emphasizing the role of cognitive mediation emerges. With increased depression and stress, a mother is more likely to have a predominantly aversive parenting style, with a reduction in parental positiveness also likely. This may proceed via a direct pathway to parenting and an indirect

pathway through maternal cognitive processes, with perception of child problem behaviour as an example. Further, the association between maternal depression and dysfunctional parenting may be heightened under conditions of contextual stress. This moderated relationship may also be mediated by cognitive processes. These pathways of influence are depicted pictorially in the theoretical model of parenting employed in the current study contained in Figure 1.

Figure 1.

Theoretical model of maternal depression and parenting.

Finally, an important sub-issue inherent in any model of maternal depression is one of variation over time. Rutter (1988) comments on the relevance to intervention of varying depression effects. For example, if distal depression was of prime importance, interventions focusing on long-term issues such as psychotherapy may be more important than stress-management or parent-training, designed to focus on more proximal problems. Thus, examining proximal versus distal effects would seem to be an important undercurrent to the study of process mechanisms underlying maternal depression and dysfunctional parenting.

Proximal versus Distal Effects.

The positions advanced by Coyne (1994) and Hartlage et al. (1993) argue for a continuous view of depression in which there is an ever-present vulnerability to depressed mood and depressive cognitions, wherein temporal fluctuations are considered to reflect symptom severity rather than the presence or absence of depression. In these trait-like conceptualizations, current mood is regarded as a less of a substantive phenomenon in its own right, with greater importance accorded to the dysfunctional characteristic of the individual.

Other researchers, however, have added conceptual weight to temporal variations in depression. In particular, Wahler and Dumas (1989) and Wahler (1990) discuss maternal depression in terms of its proximal and distal influences

on parenting. The proximal-distal distinction generally implies a distinction in time from the parenting behaviour, with proximal referring to events contemporaneous or concurrent with parenting and distal referring to events outside the immediate arena, such as previous events. Both proximal and distal events are considered to be important phenomenon, with potentially differential impact. Wahler and Dumas (1989) argue that distal cues may be more influential than proximal cues, if parental functioning is so reduced by them that proximal events are missed or ignored. Others have argued that proximal events may exert a greater impact as a result of greater availability (e.g., Crnic et al, 1983) and psychological saliency (e.g., Compas et al., 1989). This is in keeping with the operant perspective where the immediate consequences of a behaviour are seen as prime influences in determining its future occurrence (Skinner, 1938).

Wahler (1990) expands the proximal-distal discussion by relating it to the figure-ground distinction in perception. In normative perceptual processes, the figure and ground are relational and are flexibly changing over time. In the perceptual processes of the nonstressed mother, Wahler argues that the immediate child behaviour (the proximal stream) represents the figure to which the parent responds; this figure emerges from a ground of the parent's short-term interactional history with that child. In this way, any

particular parent-child moment is seen as contiguous with the parent-child context of that day. For example, if the child had a bad nightmare, any given noncompliant behaviour (i.e., throws toy, the proximal event) would be viewed within this context (i.e., unsettled due to nightmare, the distal event), with the context varying across the days in accordance with the short-term interactional history between the mother and child. Thus, the child's action pattern serves as the basis for the parent's understanding of the child's behaviour as "lawful," enabling the parental response to be informed primarily by child behaviour as well as allowing for reasonable parental predictions of child behaviour.

In contrast, with the stressed mother, there is no such lawful figure-ground relationship since irrelevant distal events (maternal depression, aversive social contacts, spousal disputes) intrude into the proximal perceptual task, thereby constituting a ground which is inappropriate to the child-care arena. Wahler (1990) suggests that with the stressed mother, any given proximal child event (figure) would be carved out of a ground comprised of the long-term interactional history with the child (e.g., "he was a colicky baby") as well as prior interactions with others (e.g. spouse, at work, other family members). Wahler uses the term "network" to capture these ground dimensions, identifying maternal self-reports of her emotional state and

the quality of her family and community life as a perceptual entity in its ground influences on parental response to child behaviour. Considering maternal depression, both distal as well as proximal depression would be regarded as inappropriate ground elements to the mother's perception of proximal child behaviour. One outcome of this inappropriate "ground" is faulty perception of the "figure," as in the case of a negative perceptual and attributional bias of child behaviour. Thus, when maternal depression serves as a basis for "ground rules" that guide maternal tracking of child behaviour, such tracking would be expected to be poor. As a consequence, chaos and conflict marks the mother-child relationship, given the mother's difficulty in matching parental response to child behaviour. Wahler (1990) cites the research on parent training outcome to illustrate that for mother-child dyads whose problems extend well beyond the dyad into the mother's social network (as well as including maternal depression), poor outcomes are often found (i.e., more likely to drop out, show fewer immediate gains, less likely to maintain gains over time).

Following Wahler's (1990) figure-ground conception of parenting, it is clear that both proximal and distal maternal depression would be expected to be linked with dysfunctional parenting. Few empirical studies on maternal distress or depression have considered proximal events, with even fewer comparing proximal versus distal events. For

instance, Dumas (1986) found that daily aversive social contacts predicted maternal aversiveness to both aversive and nonaversive child behaviour, suggesting that mothers who "missed" proximal child events were so influenced by proximal stress. Similarly, Snyder (1991) found daily levels of maternal distress (negative affect, hassles) predicted daily aversive parenting. These studies show that on days in which mothers report experiencing more negative mood and stress, they were more likely to exhibit aversive parenting, highlighting the importance of considering temporal variation in discipline as a function of temporal variation in adverse maternal personal factors.

Finally, a study by Tarullo et al. (1994) compared mothers with a lifetime diagnosis of depression who either did or did not meet diagnostic criteria for a depressive episode within the past month. Interactions between these mothers and their children revealed that mothers who were recently depressed were significantly more critical and displayed more irritability towards their adolescent daughters than affectively ill mothers with no recent episode and well mothers. Considering interactions with their preadolescent children, affectively ill mothers who were not in recent episode were significantly less engaged than depressed mothers with a recent episode and well mothers. This study highlights that different parent-child interactional findings can emerge when distal versus

proximal depression is considered.

Current study research questions

Guided by the above theoretical model, three sets of research questions are explored in the current study. These are:

1. (a) Does maternal depression predict maternal
aversiveness and positiveness towards the child?
(b) Do these associations vary as a function of time?

Based on the literature review, it would be predicted that maternal depression is positively associated with maternal aversiveness and negatively associated with maternal positiveness towards the child. Given the lack of research on proximal versus distal effects and the lack of theoretical specification, there is no basis for predicting on the relative importance of proximal versus distal effects.

2. (a) Does contextual stress predict maternal aversiveness
and positiveness towards the child?
(b) Does contextual stress function as a moderator of
maternal depression in predicting maternal
aversiveness and positiveness towards the child?
(c) Do these associations vary as a function of time?

Again, based on the literature review, it is predicted that contextual stress would be positively related to aversiveness and negatively related to positiveness towards the child. Based on theoretical speculation and limited

empirical support, it would be predicted that contextual stress exacerbates the negative effects of maternal depression on parenting. No clear predictions about proximal versus distal effects are emerge from the literature.

3. (a) Do maternal perceptions of child problem behaviour predict maternal aversiveness and positiveness towards the child?

(b) Do maternal perceptions of child problem behaviour function as a mediator of the relationship between maternal depression and maternal aversiveness and positiveness towards the child?

(c) Do these associations vary as a function of time?

Based on strong theoretical and empirical support, it would be predicted that maternal perceptions of child problem behaviour is positively associated with maternal aversiveness and negatively associated with maternal positiveness towards the child. Further, it would be predicted that maternal perceptions function as a mediator of the relationship between maternal depression and parenting. No predictions about proximal versus distal effects are suggested by the literature.

CHAPTER II - METHODS

Subjects

A community sample of 95 mother-child dyads from London, Ontario volunteered for this study. Although they were recruited through two sources, advertisements in local newspapers inviting participation in a study on family interactions and a social service agency whose primary purpose is to provide relief for families undergoing stress (e.g., recent divorce/separation), the majority of subjects (75%) were newspaper respondents. Mothers were paid \$50.00 for participation. At the outset of the study, no mothers were receiving treatment for parenting problems. Mothers nominated the child participant. Children aged 4 to 8 were sought given the appropriateness of this age range for conducting unstructured home observations. Also, this range best captures children at risk for oppositional defiant disorder, although no child was in treatment for behaviour problems. Exclusion criteria were the presence of severe developmental problems (e.g., brain-damage, autism etc.).

Data Collection Procedure

At initial assessment, mothers completed a battery of questionnaires tapping maternal depression, contextual stress and child ratings. Subsequently, a 4-week period of in-home behavioural observation were conducted, with 3 (60 minute) observations per week. These form the basis of the dependent variable of study, i.e. maternal behaviour. On

the days of each observation, mothers completed additional questionnaires tapping study variables, given in random order either before or after the behavioural observation. Once a week, mothers completed a depression inventory.

Measures

The measures in this study were selected on the basis of their consistent use in interactional research, their adequate psychometric properties, and their suitability to a community sample. They will be discussed under the categories of maternal depression, contextual stress, perceptions of child problem behaviour, and parental behaviour. Copies of measures are contained in Appendix B.

Maternal Depression.

Maternal depression is measured by self-report questionnaire. Intake depression was measured by the Beck Depression Inventory and the Center for Epidemiological Studies' Depression Scale. The latter questionnaire was also the weekly measure of depression. Daily level of depression was measured by items from the Parent Daily Report. This measure, as all daily measures, were averaged for the week, as such data combination has been recommended to amplify reliability (Kraemer, 1981). These measures and their intercorrelations are detailed below.

Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The BDI is a 21 item self-report scale which taps depressive symptomatology over the previous

week. It was designed to cover the major signs of depression in adults, yet tends to emphasize cognitive content (Rehm, 1988). Specifically, items tap disruptions in affect (2 items), cognition (11 items), overt behaviour (2 items), somatic functioning (5 items), and interpersonal functioning (1 item). Each item is scaled from 0 to 3 and the total sum of scores yields a total depression score, ranging from 0 to 63. Scores of 0-9 are considered to be in the normal range (Beck et al., 1979). It has been shown that cut-off scores in the 7-9 range are valid for nonclinical samples (Rehm, 1988). A split-half reliability of .93 has been reported (Beck, 1972) and test-retest reliability of .75 has been reported for nonclinical samples (Miller & Seligman, 1973). BDI scores correlate significantly with clinicians' ratings of depression (Metcalfe & Goldman, 1965). Elevated BDI scores in nonclinical populations are generally not indicative of diagnosable depression, although they may be useful for the screening of depressed persons (Coyne, 1994). The BDI is popular in clinical practice and research, including parent-child interactions (e.g., Brody & Forehand, 1986).

Center for Epidemiological Studies' Depression Scale (CES-D; Radloff, 1977). The CES-D was designed to measure current depressive symptomatology, over the past week. In contrast to the BDI, it tends to emphasize affective symptoms (Rehm, 1988). Its 20 items tap symptoms of affect

(8 items), cognition (4 items), behaviour (4 items), social functioning (2 items), and somatic functioning (2 items). Items are scored from 0 to 3 to reflect symptom intensity, with possible scores from 0 to 60. A cut-off score of 16 has been shown to differentiate clinical depression from nondepression with a 6.1% false-positive rate and a 36% false-negative rate in community samples (Myers & Weissman, 1980). Test-retest reliability data on a range of intervals up to 8 weeks show moderate reliability (overall correlations of .57). The CES-D correlates well with other measures of depression, such as the BDI ($r=.81$, Myers & Weissman, 1980) and has been widely used in studies of parent-child interaction (e.g., Bettis, 1988).

Parent Daily Report (PDR). This instrument is a modification of the daily telephone interview (Patterson, 1974; Chamberlain & Reid, 1987). The PDR was used as a supplement to behavioural observations as it taps many low base-rate child problem behaviours unlikely to be seen by observers (e.g., lying, stealing) as well as maternal mood over the previous 24 hours. Test-retest reliability of the PDR was reported to be from .60 to .82 (Chamberlain, 1980; Patterson, 1982).

With respect to depressive symptoms, the PDR contains 2 dichotomous items, in which a yes/no response to the presence of depressed mood and irritability are queried. Also, an overall rating of daily negative mood (1-10) and

sleep disturbance (1-10) is also measured. The daily depression score (PDR-D) reflects an aggregation of these 4 items. Again, the 3 daily depression scores were averaged to yield a weekly score. As reliability was not available for the current study's total daily depression score, reliabilities were calculated for the PDR-Depression score. Across the 4 weeks, the Cronbach's alpha ranged from .48 to .55, indicating modest reliability. These analyses can be found in Appendix C.

As the extent to which the various intake and weekly measures are associated can be considered an index of stability, their correlations are presented in Table 1 below. As shown, all depression measures are significantly correlated across all time points. Further, the weekly PDR-D scores are significantly correlated with the CES-D weekly measures, suggesting consistency between these two weekly depression scores. The degree of association is moderate, as can be expected in scales intended to assess fluctuations in mood rather than more stable traits or disorders (Rehm, 1988).

Table 1.

Correlations among Depression Measures

	BDI	CESD-I	CESD-w1	CESD-w2	CESD-w3	CESD-w4
BDI		.60*	.52*	.65*	.62*	.62*
CESD-I			.79*	.51*	.73*	.64*
CESD-w1				.47*	.66*	.65*
CESD-w2					.72*	.65*
CESD-w3						.80*
CESD-w4						
PDR-Dw1	.27**	.28**	.45*	.29*	.23**	.30*
PDR-Dw2	.50*	.45*	.45*	.58*	.49*	.52*
PDR-Dw3	.44*	.39*	.38*	.39*	.56*	.49*
PDR-Dw4	.49*	.41*	.44*	.42*	.43*	.55*
		PDR-Dw1	PDR-Dw2	PDR-Dw3	PDR-Dw4	
PDR-Dw1			.43*	.31*	.45*	
PDR-Dw2				.62*	.61*	
PDR-Dw3					.66*	
PDR-Dw4						

* $p < .01$ ** $p < .05$

Note. BDI= Beck Depression Inventory
 CESD= Center for Epidemiological Studies' Depression Scale
 PDR-D= Parent Daily Report-Depression score
 I= Intake assessment
 w1= Week 1; w2=Week 2; w3=Week3; w4=Week 4

Contextual Stress.

Contextual stress in interactional work is most frequently defined in terms of aversive social events and contacts (e.g., Forgatch et al., 1990). In keeping with current research, the present study defined stress as aversive social relations and negative daily and life events. The number of stressful life events (Life Stress Scale) and perceived lack of social support (Social Isolation) were intake measures, taken from the Parenting Stress Index. Daily measures were taken from the Community Interaction Checklist and consisted of combined daily aversive hassles and aversive social contacts. Again, these daily levels were averaged to yield weekly scores. Socio-economic status (SES), as measured by the Blishen-McRoberts Index (Blishen & McRoberts, 1976), and a constellation of SES-related variables, socioeconomic disadvantage (SED), were also considered potential indicators of contextual stress, although not proposed as the main definition of contextual stress. Consequently, these variables are discussed along with their results in Appendix D. The main study measures and their intercorrelations are detailed below.

Parenting Stress Index (PSI; Abidin, 1986). The PSI was designed to measure stress related to parent-child interactions with children under age 10. Of interest to this study is the 19 item Life Stress Score which lists stressful events to which the respondent indicates presence

or absence over the past year. The 6 item Social Isolation Scale reflects lack of support. There is no set time frame provided for answering these items and a 5-point response scale (1-5) is used. Alpha reliability is reported as .73 for the Social Isolation Scale. The PSI is a frequently used measure in parent-child interactional research (e.g. Webster-Stratton & Spitzer, 1991).

Community Interaction Checklist (CIC; Wahler, Leske, & Rogers, 1979). The CIC taps social contacts outside the immediate family and daily hassles over the previous 24 hours. There is no limit on the number of contacts that can be reported. Mothers are asked a range of questions, including the category of interactant (e.g., relative, helping agent, friend) and the valence of the interaction (negative, neutral, positive). The current study summed the number of interactions identified as aversive to indicate aversive social contacts. Similarly, the number of 10 daily events which were scored as aversive by the mother was summed to indicate aversive daily events. These two scores were added to yield a composite contextual stress score. The CIC has been shown to be a good predictor of aversive parenting and is sensitive to parent training outcome (Dumas & Wahler, 1985; Dumas, 1986; Panaccione & Wahler, 1986).

Dumas and Wahler (1985) reported an intraclass correlation coefficient for their social stress index to be .82. As the current study's index has not been used

previously, reliability was calculated. The alpha levels for weeks 2 to 4 show modest reliability (range $\alpha = .44$ to $.55$); however, week 1 shows poor reliability ($\alpha = .28$). The details of this analysis are contained in Appendix C. In an effort to assess the consistency across contextual stress measures, a correlation table of these measures is presented in Table 2 below.

As can be seen, there is poor association between intake and weekly contextual stress measures, showing they tap quite different concepts. This may be a function of the life event scale representing a sum of event occurrence, whereas the daily stress represents a sum of events deemed as aversive. As the weekly contextual stress measures are significantly inter-correlated, a moderate degree of consistency across the weeks is suggested.

Maternal Perceptions of Child Problem Behaviour.

Maternal perceptions are measured by maternal reports on rating scales of child problem behaviour. Intake perceptions are measured by the Eyberg Child Behavior Inventory and daily perceptions are measured by the Parent Daily Report. Both these measures tap common child behaviour problems. These measures and their correlations are presented below in Table 2.

Eyberg Child Behavior Inventory (ECBI; Robinson, Eyberg & Ross, 1980). The ECBI is a 35-item behavioral inventory of conduct problems for children age 2-16. Two scores are

Table 2.

Correlations among Contextual Stress Measures

	PSI-LS	PSI-SI	CIC-AEw1	CIC-AEw2	CIC-AEw3	CIC-AEw4
PSI-LS		-.01	.19	.16	.06	.10
PSI-SI			.07	.17	.03	.05
CIC-AEw1				.55*	.48*	.30*
CIC-AEw2					.61*	.52*
CIC-AEw3						.68*
CIC-AEw4						

* $p < .01$

Note. PSI-LS= Parenting Stress Index-Life Stress Scale
 PSI-SI= Parenting Stress Index-Social Isolation Scale
 CIC-AE= Community Interaction Checklist-Aversive
 Events
 w1= Week 1; w2=Week 2; w3=Week3; w4=Week 4

derived: the Intensity score is a sum of the frequency (1-7) of each behavioural item and the Problem score is a sum of items which parents identify as a problem (yes/no). Research with normative samples of children has shown reliability coefficients from .86 (test-retest) to .98 (internal consistency), suggesting strong stability and homogeneity. The ECBI is commonly used in parent-child interaction research (e.g., Webster-Stratton, 1988).

Parent Daily Report (PDR). The PDR in general is described above. There are 28 child antisocial items, 3 of which are not relevant to the present study as they pertain to children over age 9. Parents indicate whether a stated behaviour has occurred (yes/no) over the previous 24 hours. Patterson and Skinner (1984) report good internal consistency ($\alpha = .83$ for overt items and $\alpha = .54$ for covert items, which they combine to form a single score). These antisocial items have consistently been found to be significant indicators of child antisocial behavior as used by Patterson and colleagues, and the child antisocial construct has been reliably linked to aversive parenting (e.g., Patterson, 1986; Baldwin & Skinner, 1989). Reliabilities on the current Parent Daily Report-Behaviour Problem Scale (PDR-BP) show good internal consistency, with alphas ranging from .81 to .84 across the 4 weeks. These reliability analyses are found in Appendix C.

Correlation among child rating measures are below.

Table 3.

Correlations among Maternal Ratings of Child Problem Behaviour

	ECBI-I	ECBI-P	PDR-BPw1	PDR-BPw2	PDR-BPw3	PDR-BPw4
ECBI-I		.81*	.58*	.46*	.36*	.29*
ECBI-P			.52*	.38*	.31*	.41*
PDR-BPw1				.74*	.61*	.61*
PDR-BPw2					.62*	.71*
PDR-BPw3						.72*
PDR-BPw4						

*p<.01

Note. ECBI-I =Eyberg Behavior Problem Inventory-Intensity Score
 ECBI-P =Eyberg Behavior Problem Inventory-Problem Score
 PDR-BP =Parent Daily Report-Behaviour Problem Score
 w1= Week 1; w2=Week 2; w3=Week3; w4=Week 4

Maternal Behaviour Towards the Child.

As noted, maternal behaviour is derived from in-home behavioural observations of family interaction. The following sections will detail observation procedures, observer training and reliability, observation method and measures.

Observation Procedure.

Twenty-four hours was the minimum time between home observations; no observations occurred on weekends. It was made clear to families that observations would focus on the mother and target child, although the father and siblings were invited to participate. No special efforts by families for isolating the target child were noted by observers, that is, the child's natural environment seemed to prevail. When more family members participated, priority in coding was given to the mother-child interaction. Two to four interactants would characterize most observations. Mothers were requested to remain in the same or adjacent room with the target child and to interact with the child as they would normally at that time of the day. As a consequence, the settings for observations varied to include for example, mealtimes, household chores including the child or with the child present, playtimes with the child etc. Introductions to the observation equipment for families were conducted prior to the beginning of observations, usually at the intake assessment. Rules during observations included that

the observer be ignored, there be no loud television or radio, and visitors and telephone conversations were discouraged.

Observer Training and Reliability

Observers were university level psychology students who successfully completed a comprehensive training course. Training moved from an introduction to the coding system and equipment to coding videotaped interactions to coding practice families in their homes. Monthly group meetings were used as a means of preventing observer drift. Observers were naive to the purpose of this study, paid, and instructed to assume a non-interactive role.

Observer reliability was assessed twice during the 12 visits, i.e., on 17% of observations. Interobserver reliability was established within the framework of generalizability theory (Cronbach, Glaser, Nanda, & Rajaratnam, 1972). As described in detail by Dumas (1987), generalizability analyses utilizes analysis of variance methods to apportion variance due to various conditions under which the data is collected. The intraclass correlation (Shrout & Fleiss, 1979) is an index of agreement that reflects the ratio of within-subjects to between-subjects variance on the basis of absolute differences between sets of scores. For the present study, a generalizability study was conducted with all families for whom either one or two reliability observations were

available. These observations were separated into two groups (Observation 1, Observation 2) and intraclass correlation coefficients were calculated for each group separately for each of the two parenting measures, aversive parenting and positive affect (detailed in the Observational Coding System section below). The obtained intraclass correlations are contained in Table 4 below. As can be seen, agreement between coders was generally high, as was the stability of their data across time.

Observation Coding System.

Family interactions were coded using the INTERACT Coding System, a real-time computer coding system developed by Dumas (1984, 1987). The system consists of actor, behaviour (i.e., aversive, neutral, positive), setting, and qualifier codes (e.g., affective valence) that are combined according to specific syntactical rules. These direct observation strings were entered on a portable microcomputer (TRS-80, Model 100, RadioShack, Tandy Corporation) that recorded time of code entry automatically. Following an observation, raw data are transferred to a desktop computer for cleanup, verification, and analyses (e.g., baserates, conditional probabilities) by the INTERACT software system (Dumas, 1987). This study employs baserates of mother-to-child behaviour (i.e., the number of occurrences of the target behaviour over the total number of behaviours the mother directs towards the child).

Table 4.

Intraclass Correlations For All Observational Measures

	Observation 1 (n=92)	Observation 2 (n=87)
Aversive Parenting	.81	.84
Positive Affect	.83	.89

As a real-time coding procedure, INTERACT attempts to capture the complexity and pace of discrete behavioural acts from person to person. It is noteworthy for coding affective quality with "neutral" behaviours, coding it globally in terms of being negative or positive. The neutral behaviours constitute the bulk of interactional acts, such as, seeking attention, making requests, making commands, stating house rules, information-exchanges as well as responses to these. The "positive" behaviours reflect parental strategies such as helps, rewards, and approves, as well as positive expressions as affection. The "negative" behaviours reflect aversive parental strategies such as punishes and disapproves as well as negative expressions such as annoys and aggresses. Affective valences are not coded for the positive and negative behaviours.

Support for the valence of individual behavioural codes (i.e., aversive, neutral, positive) has been found (Lees, 1986). However, support for the clustering of codes along specific, distinct dimensions (e.g., aversive affect, aversive behaviour) has not been established. Consequently, a factor analysis of the INTERACT codes across the 4 weeks was conducted. Two codes (i.e., laughs, complains) were omitted as they do not tap mother-to-child behaviour, but rather reflect situational behaviour. A third code (i.e., mother request child with negative affect) was not included as it did not occur. The scree test (Cattell, 1966) from an

exploratory factor analysis consistently identified two distinct factors. Consequently, a confirmatory factor analysis, specifying two factors, yielded consistent results across the four weeks of data. Although the individual codes loading on each factor varied slightly, a consistent pattern was identified. The first factor, labelled aversive parenting, consisted of neutral behaviour codes with a negative affective valence, aversive behaviour codes, and two positive behaviour codes which loaded negatively. Thus, aversive parenting denoted negative expressions of attention-seeking, commanding (directly, indirectly, future-orientation), and corrections; negative behaviours of annoying, disapproving, punishing, and aggressing; and the lack of helping and approving behaviours. The second factor, labelled positive affect, consisted of neutral codes with a positive affective valence and one positive behaviour code. Thus, positive affect denoted positive expressions of attention-seeking, requesting, commanding, and correcting, as well as affectionate behaviour.

A similar two-factor solution has been found in factor analyses of two different sets of INTERACT data, that is, family interactions of clinic-referred families in the same locale as the present study, and family interactions of community families in a large, urban bilingual center (Dumas, 1994, personal communication). The details of the factor analyses are contained in Appendix E.

Overview of Data Analysis

Guided by the theoretical framework presented in the introduction, multiple regression analyses are used to investigate the prediction of aversive parenting and positive affect by maternal depression, contextual stress, and their interaction. To test for mediation by maternal perceptions of child problem behaviour, Baron and Kenny (1986) recommend estimating a series of regressions: (1) regressing the mediator on the independent variable, (2) regressing the dependent variable on the independent variable, and (3) regressing the dependent variable on both the independent variable and the mediator. To test for moderation by contextual stress, Baron and Kenny (1986) recommend multiple regression where the independent and mediator variables are entered, followed by entry of their interaction. Specific requirements for establishing mediator and moderator status will be presented in the results. In accordance with the primacy of parental characteristics, maternal depression will be entered first in regressions.

To evaluate proximal versus distal effects, the series of above regressions move back in time. For example, week 4 aversive parenting is predicted by week 4 variables (depression, social stress etc.), week 3 variables, week 2 variables, week 1 variables and, finally, intake variables. The relative importance of proximal effects is established if week 4 parenting is significantly predicted by week 4

variables and not by variables further removed in time, for example, at intake. The relative importance of distal effects is shown if intake variables achieve greatest predictive power as compared to week 4 variables. This analytic strategy is repeated for each of the four weeks of parenting data. Consequently, conclusions about the relative importance of study variables are based on a pattern of results, rather than an isolated significant regression finding. This requirement that the series of regressions be significant before conclusions are drawn serves to attenuate some of the Type I error concerns associated with employing several multiple regressions (Marascuilo & Levin, 1983). Further, given these are new areas of study, one can argue that the Type II error should be minimized in order to encourage continued research into these mediator and moderator hypotheses, especially given their application to intervention.

CHAPTER III - RESULTS

Demographic characteristics of the sample.

The demographic characteristics of the 95 mother-child dyads are contained in Table 5. All families were Caucasian. Children ranged in age from 4 to 8 years ($M = 5.79$, $SD = 1.33$). The majority of target children were male (60%). Mothers ranged in age from 22 to 46 years ($M = 31.95$, $SD = 4.97$). Most mothers had some post-secondary education (86%), 1 or 2 children (60%), and were at-home (60%). While most mothers were married (64%), about one third were single mothers. About one-quarter of families were reliant on government assistance as their primary income source and one-quarter received low Blishen SES ratings (i.e., ratings=2,3 "unskilled labour"). Of the 68 families who could be classified according to the Blishen scale, the range describing most families included skilled, blue-collar to professional occupations ($M=4.76$, $SD=1.54$).

Table 6 describes the sample characteristics on the clinical measures. With respect to maternal depression, it is noteworthy that the sample mean BDI is in the cut-off range for mild depression. Over one third (37%) of mothers scored above the clinical cut-off of 9 on the BDI at intake. This is higher than the CES-D at intake, where the mean is well below the clinical cut-off of 16 and only 10.5% of mothers scored at or above the cut-off. However, the intake CES-D was available for 84 subjects as compared

to the entire sample, and the CES-D tends to emphasize the affective components of depression whereas the BDI emphasizes the cognitive components. Across the four weeks of observations, 14-21% of mothers reported CES-D weekly scores that were at or above the clinical cut-off. There is no clinical cut-off level for the daily measure of depression (PDR-D), although scores could range from 0 to 22; across the four weeks scores ranged from a low of 2 to a high of 17.67, with the mean ranging from a low of 8.58 to a high of 9.48.

With respect to maternal ratings of child behaviour problems, 24% of mothers rated their children at or above the clinical cut-off of 127 on the Eyberg Child Behavior Inventory (Intensity Scale) at intake. These scores could range from 36 (never any problems) to 252 (always all problems); the scores in this study ranged from 59 to 234. In identifying the particular problems as management problems (ECBI-Problem Scale), scores could range from 0 (no problems) to 36 (all behaviours listed a problem); the scores in this study ranged from 0 to 32. Seventeen percent of mothers rated their management problems at or above the clinical cut-off of 15. While there are no clinical cut-offs for the daily measures of child behaviour problems (PDR-BP), scores could range from 0 (no problems) to 21 (all problem items endorsed); the range obtained in this sample across the four weeks was from a low of 0 to a high of 14.33.

With respect to contextual stress measures, 31% of mothers scored at or above the clinical cut-off of 17 stress events on the Parenting Stress Index (Life Stress Scale) and 18% scored at or above the clinical cut-off of 18 on the PSI Social Support Scale. There are no clinical cut-offs for the daily measure of stress (CIC) and there is no set upper limit to scores, as there is no limit placed on the number of personal contacts that could be reported. The CIC combined social and daily stress scores ranged across the 4 weeks from 0 to 5.33.

As detailed in the Method section, the factor analyses of the INTERACT codes yielded a more refined definition of maternal behaviours than "positiveness" and "aversiveness," identifying positive affect as positive expressions of neutral behaviours (commands, seeking attention, etc. accompanied by pleasant tone, pleasantries) and affection to the child and aversive parenting as negative expressions of neutral behaviours, aversive strategies (punishment, aggression etc.), and the lack of positive strategies (helping, approval). From an inspection of the means, it is evident that there are greater levels of aversiveness and/or reduced levels of positiveness (e.g., helping, approving) in the later weeks 3 and 4, as compared to the earlier weeks 1 and 2. This may reflect "true" fluctuation in level of aversive parenting across the 4 weeks. Alternatively, it may reflect some reactivity to the observer. Given the novelty

of having an observer in the home, one might expect parents to dampen natural aversive parenting tendencies during initial contacts, with such effortful parenting more difficult to sustain as time went on (weeks 3 and 4). Another alternative is that the observer constituted a direct source of contextual stress and, as the observations accumulated, this may have influenced adversely parental behaviour. It is noted that the level of positive affect remained constant across the four weeks.

Table 5.
Demographic Characteristics of the Sample

Variable	N	Mean	SD	%
Mother				
Age	95	31.95	4.97	
SES	95			
Government Assistance	(23)			24.21
Missing	(4)			4.21
Blisshen 2 (low)	(01)			1.05
Blisshen 3	(22)			23.16
Blisshen 4	(05)			5.26
Blisshen 5	(16)			16.84
Blisshen 6	(12)			12.63
Blisshen 7 (high)	(12)			12.63
Blisshen Scale (2-7)	68	4.76	1.54	
Marital Status	95			
- Married	(61)			64.20
- Single	(32)			33.80
- Common-law, <2 years.	(02)			2.10
Education	95			
- Elementary Only	(03)			3.20
- Some High School	(10)			10.50
- High School Grad.	(18)			18.90
- College/University	(64)			67.40
Employment	95			
- Unemployed/At-home	(57)			60.00
- Part-Time Employment	(27)			28.42
- Full-Time Employment	(11)			11.58
Number of Children	95			
Missing	(4)			4.21
- One	(12)			12.63
- Two	(45)			47.37
- Three	(25)			26.32
- Four	(8)			8.42
- Six	(1)			1.05
Child				
Age	95	5.79	1.33	
Gender	95			
- Female	(38)			40.00
- Male	(57)			60.00

Table 6.

Means, Standard Deviations, and Percentages in clinical ranges for Maternal Depression, Perceptions of Child Problem Behaviour, Contextual Stress, and Parenting Measures

Variable	N	Mean	SD	%
Maternal Depression				
BDI	95	8.34	7.64	
nondepressed (0-9)				63.2
mildly depressed (10-15)				24.4
moderately depressed (16-23)				7.4
severely depressed (24+)				5.3
CES-D - Intake	84	8.76	8.90	
depressed (16+)				10.5
CES-D - Week 1	91	9.78	8.78	
depressed (16+)				20.0
CES-D - Week 2	93	9.46	9.32	
depressed (16+)				21.1
CES-D - Week 3	92	8.10	9.00	
depressed (16+)				13.7
CES-D - Week 4	92	7.89	7.54	
depressed (16+)				16.8
PDR-D - Week 1	95	9.48	2.95	
PDR-D - Week 2	94	8.94	2.75	
PDR-D - Week 3	94	8.71	2.58	
PDR-D - Week 4	94	8.58	3.05	
Maternal Perceptions of the Child Problem Behaviour				
Eyberg - Intensity	95	109.96	31.29	
Eyberg - Problem	95	7.71	7.01	
PDR-PB - Week 1	95	4.77	2.67	
PDR-PB - Week 2	94	3.94	2.75	
PDR-PB - Week 3	94	3.40	2.49	
PDR-PB - Week 4	94	3.53	2.71	
Contextual Stress				
PSI-Life Stress	95	14.66	12.68	
PSI-Social Support	95	13.04	4.13	
CIC-AE - Week 1	95	1.08	.70	
CIC-AE - Week 2	95	.98	.89	
CIC-AE - Week 3	94	1.10	.96	
CIC-AE - Week 4	95	1.10	.98	

Parenting

A.P. - Week 1	95	-.006	.135
A.P. - Week 2	95	.003	.146
A.P. - Week 3	94	.042	.162
A.P. - Week 4	95	.047	.149
P.A. - Week 1	95	.073	.053
P.A. - Week 2	95	.073	.052
P.A. - Week 3	94	.070	.051
P.A. - Week 4	95	.076	.047

Note.

- BDI = Beck Depression Inventory
 CESD = Center for Epidemiological Studies' Depression Scale
 PDR-D = Parent Daily Report - Depression
 PDR-BP = Parent Daily Report - Behavior Problems
 PSI = Parenting Stress Index
 CIC-AE = Community Interaction Checklist - Aversive Events
 A.P. = Aversive Parenting
 P.A. = Positive Affect

Review of Thesis Questions.

To recap, the thesis explores the nature of the influence of maternal depression on parenting. On a basic level, it was proposed that depression scores would be positively correlated with aversiveness and negatively correlated with positiveness. However, given the change in the proposed behavioural definitions of parenting following factor analyses, this prediction needs to be altered. Depression is expected to be positively associated with aversive parenting, as the current definition is in keeping with the trend in the literature to combine affect and strategy. However, predictions are unclear as to whether positive affect, as separated from positive strategy, is associated with depression since few previous studies have isolated positive affect.

In an effort to understand the context in which depression may operate, regression analyses were utilized to address whether contextual stress serves to amplify the effects of depression on parenting; in other words, maternal perceived level of social stress was predicted to function as a moderator of depression in predicting parenting.

To understand further these relations within a broader context, regression analyses sought to address whether maternal ratings of their child behaviour problems would account for any depression-parenting relationship; in other words, maternal ratings of the child were predicted to function as a mediator of the depression-parenting relationship.

This question would aid in understanding whether depression exerts a direct effect or whether its influence is best understood in terms of how it impacts on the mother's cognitive processes - her perceptions of child behavior.

Finally, these regression analyses were repeated across the four weeks of data. As a result, questions on the impact of proximal and distal depression can be addressed. The results will be discussed according to the following specific questions:

- 1) What is the relationship of maternal depression to maternal aversive parenting and positive affect, as it spans across time?
- 2) Does maternal contextual stress function as a moderator of depression? Does this relation vary across time?
- 3) Do maternal ratings of child behavior problems function as a mediator of the depression-parenting relationship? Does this relation vary across time?

Question 1. What is the relationship of maternal depression to maternal positive affect and aversive parenting, as it spans across time?

Table 7 contains the correlation matrix of the various maternal depression scores and the composite parenting scores. Two conclusions can be made from these data.

Conclusion 1. Maternal depression fails to show consistent significant correlations with positive affect, although the majority of correlations are in the expected (negative)

direction. This suggests that the presence of depression does not substantially dampen the ability of mothers to express positive affect towards their child.

Conclusion 2. In contrast to maternal positive affect, maternal depression, whether it is measured on a daily (PDR-D) or weekly (CES-D) basis, is consistently, positively, and significantly associated with maternal aversive parental behaviour toward the child. Although the size of these correlations may seem modest, they are at least consistent with, if not larger than, other studies using self-report depression and observed parenting (e.g., Webster-Stratton & Spitzer, 1991).

No strong trend suggestive of time-dependent effects emerges (e.g., higher correlations with contemporaneous variables, week 4 depression, week 4 aversive parenting). As evidence points to earlier levels of depression being associated with subsequent parental behaviour, and earlier parental behaviour being associated with subsequent depression, reciprocal causation may be operative. As causation cannot be addressed effectively here, such questions as what influences what the most must await experimental validation as found in tests of intervention targeting maternal depression and aversive parenting.

Corollary Issues.

While these results provide a clear picture of maternal depression co-existing with aversive parenting, and

maternal depression being independent of positive affect, the question as to which specific behaviours are most closely related to depression may be raised. It may be that the "topography" of parenting as the level of depression increases is distinct both at the behavioural strategy and at the affective levels. As this is a corollary issue, it is discussed in Appendix H.

Another corollary issue is the association between depression and perceptions across time; these correlations are contained in Appendix F. In brief, no clear direction emerges as strongest; the relationship between maternal depression and ratings appears to be reciprocal.

Table 7.
Correlations of Maternal Depression Measures with Maternal Aversive Parenting (A.P.) and Positive Affect (P.A.)

Variables	A.P.w1	A.P.w2	A.P.w3	A.P.w4
Intake:				
BDI	.38*	.37*	.34*	.36*
CESD	.34*	.36*	.32*	.29*
Week 1:				
CESDw1	.40*	.38*	.34*	.28*
PDR-Dw1	.37*	.24*	.28*	.26*
Week 2:				
CESDw2	.38*	.28*	.32*	.29*
PDR-Dw2	.34*	.28*	.29*	.28*
Week 3:				
CESDw3	.38*	.31*	.32*	.24*
PDR-Dw3	.34*	.28*	.34*	.22*
Week 4:				
CESDw4	.32*	.29*	.32*	.26*
PDR-Dw4	.48*	.41*	.43*	.38*
Variables	P.A.w1	P.A.w2	P.A.w3	P.A.w4
Intake:				
BDI	-.00	-.22*	-.07	-.19
CESD	-.06	-.15	-.15	-.20
Week 1:				
CESDw1	-.12	-.17	-.20	-.24*
PDR-Dw1	.09	.08	.01	-.07
Week 2:				
CESDw2	-.05	-.10	.02	-.11
PDR-Dw2	.06	-.08	-.08	-.13
Week 3:				
CESDw3	-.08	-.19	-.03	-.20
PDR-Dw3	-.01	-.01	.03	-.13
Week 4:				
CESDw4	.03	-.18	-.05	-.14
PDR-Dw4	-.03	-.12	-.15	-.25*

* $p < .05$

Note. A.P. = aversive parenting; P.A. = positive affect
 BDI = Beck Depression Inventory
 CES-D = Center for Epidemiological Studies' Depression
 PDR-D = Parent Daily Report - Depression

Question 2. Does maternal contextual stress function as a moderator of depression? Does this relation vary across time?

To recap the statistical criteria required to confirm moderator status, Baron and Kenny (1985) identify a single condition: the interaction between the predictor (depression) and the moderator (contextual stress) must be significant. They further note that an interaction term can most easily be interpreted when the moderator is uncorrelated with both the predictor (depression) and the criterion (parenting). Thus, nonsignificant correlations between (1) contextual stress and depression and (2) contextual stress and parenting would be desirable.

Table 8 through Table 15 present the multiple regression analyses predicting aversive parenting and positive affect, for each of the four weeks separately. Within each week, all depression (BDI, CES-D, PDR-D) and contextual stress measures (PSI- Life Events, PSI-Social Isolation, CIC-S) are presented together. These tables include: the correlation between the moderator (stress) and predictor (depression); the correlation between the moderator (stress) and the dependent variable (parenting); and the standardized regression coefficients derived from the regressions in which depression is entered first, contextual stress second, and their interaction is entered last.

As the results across the four weeks are generally consistent, the following conclusions are drawn:

Conclusion 1. Maternal contextual stress does not predict maternal aversive parenting or positive affect, beyond maternal depression. This finding was consistent across all four weeks. Indeed, the desired case of uncorrelated moderator and criterion (both aversive parenting and positive affect) did exist across the four weeks. There was one exception: intake measures of contextual stress, in particular the PSI Social Isolation scale, was consistently positively correlated with aversive parenting across the four weeks. This suggests that as a mother's perceived social isolation increases, so too does the likelihood that she will display aversiveness towards her child. However, neither Social Isolation nor its interaction with depression accounted for a significant amount of the variance in aversive parenting, when controlling for maternal depression. Thus, it would seem that intake level of social isolation is not a strong contributor to aversive parenting.

Conclusion 2. Contextual stress does not function as a moderator of depression in predicting aversive parenting or positive affect. With respect to aversive parenting, the only consistent interaction to reach significance across the four weeks was week 1 contextual stress by week 1 maternal depression. However, this result is difficult to interpret given the poor level of reliability of the week 1 contextual stress measure. The only other interaction to reach significance was that of intake maternal depression by

intake social support in predicting week 3 aversive parenting. Because this result was not consistently found across the weeks, it is difficult to consider as robust.

With respect to positive affect, only one significant interaction was found, week 3 depression by week 3 contextual stress predicting week 3 positive affect. Again, as an isolated finding, it cannot be considered robust.

To summarize, it would seem that maternal perceived level of contextual stress does not moderate the influence of depression on aversive parenting or positive affect. Maternal contextual stress itself does not seem to be a strong explanatory variable when considering aversive parenting and positive affect, as measured in this study.

Table 8.

**Maternal Depression, Contextual Stress, and their
Interaction Predicting Week 4 Maternal Aversive Parenting**

Independent variables	Week 4			R ² total
	rIV.M	rM.C	Beta	
Intake:				
1. BDI	.14		.34*	.13
2. PSI-Life Stress		.10	.10	.14
3. BDI x Life Stress			.00	.14

1. BDI	.54*		-.22	.13
2. PSI-Social Isolation		.32*	.06	.15
3. BDI x Social Isolation			.57	.17

1. CESD - Intake	.15		.27	.09
2. PSI-Life Stress		.10	.10	.10
3. CESD x Life Stress			.01	.10

1. CESD - Intake	.50*		.12	.09
2. PSI-Social Isolation		.32*	.22	.13
3. CESD x Social Isolation			.07	.13

Week 1:				
1. PDR-D w1	.27*		.80*	.07
2. CIC-AEW1		.05	1.10*	.07
3. PDR-D w1 x CIC-AEW1			-1.41*	.16

1. CESD w1	.12		.71*	.08
2. CIC-AEW1		.05	.39*	.08
3. CESD w1 x CIC-AEW1			-.66*	.15

Week 2:				
1. FDR-D w2	.41*		.19	.08
2. CIC-AEW2		.14	-.26	.08
3. PDR-D w2 x CIC-AEW2			.34	.08

1. CESD w2	.46*		.10	.09
2. CIC-AEW2		.14	-.20	.09
3. CESD w2 x CIC-AEW2			.38	.12

Independent variables	rIV.M	Week 4		R ² total
		rM.C	Beta	
Week 3:				
1. PDR-D w3	.29*		.08	.05
2. CIC-AEW3		.04	-.53	.05
3. PDR-D w3 x CIC-AEW3			.58	.06

1. CESD w3	.28*		.03	.06
2. CIC-AEW3		.04	-.21	.06
3. CESD w3 x CIC-AE w3			.23	.08

Week 4:				
1. PDR-D w4	.34*		.25	.14
2. CIC-AEW4		.02	-.59	.16
3. PDR-D w4 x CIC-AEW4			.56	.18

1. CESD w4	.24*		.14	.07
2. CIC-AEW4		.02	-.15	.07
3. CESD w4 x CIC-AEW4			.20	.08

* $p < .05$

Note. IV=independent variable (depression)

M=moderator variable (contextual stress)

C=criterion (aversive parenting)

Beta=standardized regression coefficient entering

1) depression 2) contextual stress 3) interaction

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

PSI-LS= Parenting Stress Index - Life Stress Scale

PSI-SI= Parenting Stress Index - Social Isolation Scale

CIC-AE= Community Interaction Checklist - Aversive Events

Table 9.

Maternal Depression, Contextual Stress, and their Interaction Predicting Week 3 Maternal Aversive Parenting

Independent variables	rIV.M	Week 3		R ² total
		rM.C	Beta	
Intake:				
1. BDI	.14		.38*	.11
2. PSI-Life Stress		.13	.14	.12
3. BDI x Life Stress			-.09	.12

1. BDI	.54*		-.51	.11
2. PSI-Social Isolation		.33*	.03	.14
3. BDI x Social Isolation			.86*	.18

1. CESD - Intake	.15		.34*	.10
2. PSI-Life Stress		.13	.13	.11
3. CESD x Life Stress			-.08	.11

1. CESD - Intake	.50*		-.17	.10
2. PSI-Social Isolation		.33*	.15	.14
3. CESD x Social Isolation			.42	.15

Week 1:				
1. PDR-D w1	.27*		.66*	.08
2. CIC-AEW1		-.04	.60	.09
3. PDR-D w1 x CIC-AEW1			-.90*	.13

1. CESD w1	.12		.75*	.11
2. CIC-AEW1		-.04	.27	.12
3. CESD w1 x CIC-AEW1			-.62*	.18

Week 2:				
1. PDR-D w2	.41*		.30*	.08
2. CIC-AEW2		.06	-.14	.09
3. PDR-D w2 x CIC-AEW2			.07	.09

1. CESD w2	.46*		.29	.10
2. CIC-AEW2		.06	-.20	.11
3. CESD w2 x CIC-AEW2			.16	.12

Independent variables	rIV.M	Week 3 rM.C	Beta	R ² total
Week 3:				
1. PDR-D w3	.29*		.34*	.11
2. CIC-AEW3		-.03	-.28	.13
3. PDR-D w3 x CIC-AEW3			.16	.13

1. CESD w3	.28*		.20	.11
2. CIC-AEW3		-.03	-.27	.12
3. CESD w3 x CIC-AEW3			.27	.14

* $p < .05$

Note. IV=independent variable (depression)

M=moderator variable (contextual stress)

C=criterion (aversive parenting)

Beta=standardized regression coefficient entering
1)depression 2)contextual stress 3) interaction

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression
Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

PSI-LS= Parenting Stress Index - Life Stress Scale

PSI-SI= Parenting Stress Index - Social Isolation Scale

CIC-AE= Community Interaction Checklist - Aversive Events

Table 10.
Maternal Depression, Contextual Stress, and their
 Interaction Predicting Week 2 Maternal Aversive Parenting

Independent variables	Week 2		Beta	R ² total
	rIV,M	rM,C		
Intake:				
1. BDI	.14		.32*	.14
2. PSI-Life Stress		.20*	.12	.16
3. BDI x Life Stress			.06	.16

1. BDI	.54*		-.03	.14
2. PSI-Social Isolation		.33*	.11	.16
3. BDI x Social Isolation			.36	.17

1. CESD - Intake	.15		.30*	.13
2. PSI-Life Stress		.20*	.12	.15
3. CESD x Life Stress			.06	.15

1. CESD - Intake	.50*		.32	.13
2. PSI-Social Isolation		.33*	.22	.16
3. CESD x Social Isolation			-.07	.16
Week 1:				
1. PDR-D w1	.27*		.50*	.06
2. CIC-AEW1		-.08	.29	.08
3. PDR-D w1 x CIC-AEW1			-.55	.10

1. CESD w1	.12		.61*	.15
2. CIC-AEW1		-.078	.06	.16
3. CESD w1 x CIC-AEW1			-.32	.18
Week 2:				
1. PDR-D w2	.41*		.28	.08
2. CIC-AEW2		.07	-.15	.08
3. PDR-D w2 x CIC-AEW2			.10	.08

1. CESD w2	.46*		.23	.08
2. CIC-AEW2		.07	-.18	.08
3. CESD w2 x CIC-AEW2			.18	.09

* $p < .05$

Note. IV=independent variable (depression)

M=moderator variable (contextual stress)

C=criterion (aversive parenting)

Beta=standardized regression coefficient

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

PSI-LS= Parenting Stress Index - Life Stress Scale

PSI-SI= Parenting Stress Index - Social Isolation Scale

CIC-AE= Community Interaction Checklist - Aversive Events

Table 11.

Maternal Depression, Contextual Stress, and their Interaction Predicting Week 1 Maternal Aversive Parenting

Independent variables	rIV.M	Week 1		R ² total
		rM.C	Beta	
Intake:				
1. BDI	.14		.30*	.14
2. PSI-Life Stress		.21*	.09	.17
3. BDI x Life Stress			.11	.17

1. BDI	.54*		-.10	.14
2. PSI-Social Isolation		.27*	-.01	.16
3. BDI x Social Isolation			.51	.17

1. CESD - Intake	.15		.21	.11
2. PSI-Life Stress		.21*	.03	.14
3. CESD x Life Stress			.19	.14

1. CESD - Intake	.50*		.34	.11
2. PSI-Social Isolation		.27*	.16	.13
3. CESD x Social Isolation			-.08	.13

Week 1:				
1. PDR-D w1	.27*		.78*	.14
2. CIC-AEW1		-.03	.64	.15
3. PDR-D w1 x CIC-AEW1			-.97*	.20

1. CESD w1	.12		.78*	.16
2. CIC-AEW1		-.03	.25	.17
3. CESD w1 x CIC-AEW1			-.57*	.22

* p<.05

Note. IV=independent variable (depression)

M=moderator variable (contextual stress)

C=criterion (aversive parenting)

Beta=standardized regression coefficient entering
1)depression 2)contextual stress 3)interaction

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression
Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

PSI-LS= Parenting Stress Index - Life Stress Scale

PSI-SI= Parenting Stress Index - Social Isolation Scale

CIC-AE= Community Interaction Checklist - Aversive Events

Table 12.

Maternal Depression, Contextual Stress, and their Interaction Predicting Week 4 Maternal Positive Affect

Independent variables	Week 4			R ² total
	rIV.M	rM.C	Beta	
Intake:				
1. BDI	.14		.04	.04
2. PSI-Life Stress		.04	.32	.04
3. BDI x Life Stress			-.41	.07

1. BDI	.54*		-.23	.04
2. PSI-Social Isolation		-.16	-.11	.04
3. BDI x Social Isolation			.10	.04

1. CESD - Intake	.15		-.12	.04
2. PSI-Life Stress		.04	.18	.05
3. CESD x Life Stress			-.17	.05

1. CESD - Intake	.50*		-.08	.04
2. PSI-Social Isolation		-.16	-.07	.05
3. CESD x Social Isolation			-.09	.05

Week 1:				
1. PDR-D w1	.27*		-.39	.00
2. CIC-AEW1		.09	-.49	.02
3. PDR-D w1 x CIC-AEW1			.75	.04

1. CESD w1	.12		-.26	.06
2. CIC-AEW1		.09	.11	.07
3. CESD w1 x CIC-AEW1			.02	.07

Week 2:				
1. PDR-D w2	.41*		-.17	.02
2. CIC-AEW2		-.06	-.15	.02
3. PDR-D w2 x CIC-AEW2			.17	.02

1. CESD w2	.46*		-.16	.01
2. CIC-AEW2		-.06	-.06	.01
3. CESD w2 x CIC-AEW2			.10	.01

Week 3:				
1. PDR-D w3	.29*		-.22	.02
2. CIC-AEW3		-.05	-.33	.02
3. PDR-D w3 x CIC-AEW3			.37	.02

1. CESD w3	.28*		-.29	.04
2. CIC-AEW3		-.05	-.06	.04
3. CESD w3 x CIC-AEW3			.13	.04

Independent variables	rIV.M	Week 4		R ² total
		rM.C	Beta	
Week 4:				
1. PDR-D w4	.34*		-.25	.06
2. CIC-AEW4		-.15	-.13	.07
3. PDR-D w4 x CIC-AEW4			.08	.07

1. CESD w4	.24*		-.08	.02
2. CIC-AEW4		-.15	-.10	.03
3. CESD w4 x CIC-AEW4			-.05	.03

* $p < .05$

Note. IV=independent variable (depression)

M=moderator variable (contextual stress)

C=criterion (positive affect)

Beta=standardized regression coefficient entering

1) depression 2) contextual stress 3) interaction

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

PSI-LS= Parenting Stress Index - Life Stress Scale

PSI-SI= Parenting Stress Index - Social Isolation Scale

CIC-AE= Community Interaction Checklist - Aversive Events

Table 13.

Maternal Depression, Contextual Stress, and their Interaction Predicting Week 3 Maternal Positive Affect

Independent variables	rIV.M	Week 3		R ² total
		rM.C	Beta	
Intake:				
1. BDI	.14		.06	.01
2. PSI-Life Stress		-.00	.15	.01
3. BDI x Life Stress			-.22	.02

1. BDI	.54*		-.37	.01
2. PSI-Social Isolation		-.10	-.17	.01
3. BDI x Social Isolation			.41	.02

1. CESD - Intake	.15		-.02	.02
2. PSI-Life Stress		-.00	.19	.02
3. CESD x Life Stress			-.25	.03

1. CESD - Intake	.50*		-.40	.02
2. PSI-Social Isolation		-.10	-.10	.02
3. CESD x Social Isolation			.32	.03

Week 1:				
1. PDR-D w1	.27*		-.07	.00
2. CIC-AEW1		.12	.03	.02
3. PDR-D w1 x CIC-AEW1			.12	.02

1. CESD w1	.12		-.26	.04
2. CIC-AEW1		.12	.12	.06
3. CESD w1 x CIC-AEW1			.06	.06

Week 2:				
1. PDR-D w2	.41*		-.19	.01
2. CIC-AEW2		.10	-.03	.03
3. PDR-D w2 x CIC-AEW2			.21	.03

1. CESD w2	.46*		-.18	.00
2. CIC-AEW2		.10	-.04	.01
3. CESD w2 x CIC-AEW2			.28	.03

Independent variables	Week 3			R ² total
	rIV.M	rM.C	Beta	
Week 3:				
1. PDR-D w3	.29*		-.31*	.00
2. CIC-AEW3		.10	-.96*	.01
3. PDR-D w3 x CIC-AEW3			1.22*	.08

1. CESD w3	.28*		-.25	.00
2. CIC-AEW3		.10	-.03	.01
3. CESD w3 x CIC-AEW3			.30	.03

* $p < .05$

Note. IV=independent variable (depression)

M=moderator variable (contextual stress)

C=criterion (positive affect)

Beta=standardized regression coefficient entering

1)depression 2)contextual stress 3)interaction

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

PSI-LS= Parenting Stress Index - Life Stress Scale

PSI-SI= Parenting Stress Index - Social Isolation Scale

CIC-AE= Community Interaction Checklist - Aversive Events

Table 14.
Maternal Depression, Contextual Stress, and their
Interaction Predicting Week 2 Maternal Positive Affect

Independent variables	Week 2			R ² total
	rIV.M	rM.C	Beta	
Intake:				
1. BDI	.14		-.23	.05
2. PSI-Life Stress		.02	.04	.05
3. BDI x Life Stress			.01	.05

1. BDI	.54*		-.21	.05
2. PSI-Social Isolation		-.19	-.11	.05
3. BDI x Social Isolation			.05	.05

1. CESD - Intake	.15		-.19	.02
2. PSI-Life Stress		.02	.01	.02
3. CESD x Life Stress			.06	.03

1. CESD - Intake	.50*		.26	.02
2. PSI-Social Isolation		-.19	-.08	.04
3. CESD x Social Isolation			-.38	.05
Week 1:				
1. PDR-D w1	.27*		-.10	.01
2. CIC-AEW1		.07	-.29	.01
3. PDR-D w1 x CIC-AEW1			.43	.02

1. CESD w1	.12		-.33	.03
2. CIC-AEW1		.07	-.04	.04
3. CESD w1 x CIC-AEW1			.23	.05
Week 2:				
1. PDR-D w2	.41*		.05	.01
2. CIC-AEW2		-.05	.42	.01
3. PDR-D w2 x CIC-AEW2			-.51	.02

1. CESD w2	.46*		.03	.01
2. CIC-AEW2		-.05	.14	.01
3. CESD w2 x CIC-AEW2			-.27	.03

* $p < .05$

Note. IV-independent variable (depression)

M-moderator variable (contextual stress)

C-criterion (positive affect)

Beta-standardized regression coefficient

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

PSI-LS= Parenting Stress Index - Life Stress Scale

PSI-SI= Parenting Stress Index - Social Isolation Scale

CIC-AE= Community Interaction Checklist - Aversive Events

Table 15.

Maternal Depression, Contextual Stress, and their Interaction Predicting Week 1 Maternal Positive Affect

Independent variables	rIV,M	Week 1		R ² total
		rM,C	Beta	
Intake:				
1. BDI	.14		.18	.00
2. PSI-Life Stress		.07	.28	.01
3. BDI x Life Stress			-.34	.03

1. BDI	.54*		-.19	.00
2. PSI-Social Isolation		.06	.05	.01
3. BDI x Social Isolation			.17	.01

1. CESD - Intake	.15		.09	.00
2. PSI-Life Stress		.07	.29	.01
3. CESD x Life Stress			-.31	.03

1. CESD - Intake	.50*		-.28	.00
2. PSI-Social Isolation		.06	.09	.02
3. CESD x Social Isolation			.18	.02

Week 1:				
1. PDR-D w1	.27*		-.05	.01
2. CIC-AEW1		.13	-.11	.02
3. PDR-D w1 x CIC-AEW1			.28	.02

1. CESD w1	.12		-.14	.01
2. IC-AEW1		.13	.14	.03
3. CESD w1 x CIC-AEW1			.01	.03

* p<.05

Note. IV=independent variable (depression)

M=moderator variable (contextual stress)

C=criterion (positive affect)

Beta=standardized regression coefficient entering
1)depression 2)contextual stress 3)interaction

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression
Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

PSI-LS= Parenting Stress Index - Life Stress Scale

PSI-SI= Parenting Stress Index - Social Isolation Scale

CIC-AE= Community Interaction Checklist - Aversive Events

Question 3. Does maternal ratings of child behavior problems function as a mediator the depression-parenting relationship? Does this relation vary across time?

To recap the statistical criteria for determining whether a variable functions as a mediator, the steps outlined in Baron and Kenny (1985) are reviewed: (1) the independent variable must affect the mediator, i.e. when regressing the mediator on the independent variable, a significant correlation exists between the independent variable (depression) and the mediator (child ratings), (2) the independent variable must affect the dependent variable, i.e. when regressing the dependent variable on the independent variable, a significant correlation exists between the independent variable (depression) and the dependent variable (aversive parenting), (3) the mediator must affect the dependent variable, i.e. when regressing the dependent variable on both the independent variable and on the mediator, firstly, the mediator (child ratings) must be a significant predictor of the dependent variable (parenting) and, secondly, the effect of the independent variable (depression) on the dependent variable (parenting) must be less in this third equation than it was in the second, with perfect mediation existing if the independent variable has no effect. In other words, the previously significant relation between the independent (depression) and dependent variable (parenting) is (a) no longer

significant and (b) the value of the relation is significantly decreased (i.e., the beta value for depression has decreased and is no longer significant once child ratings are entered).

Tables 16 through 23 contain the multiple regression results for maternal aversive parenting and positive affect, with each of the four weeks presented separately. Results from the various measures of depression (BDI, CESD, PDR-D) and ratings (Eyberg-Intensity, Eyberg-Problem, PDR-BP) are presented together. These tables depict: the correlation between the predictor (depression) and mediator (ratings), the correlation between the predictor (depression) and the criterion (parenting), and the standardized regression coefficients derived from the regressions in which depression is entered first, and child ratings second.

Given the general consistency in results, the following conclusions are made:

Conclusion 1. Child ratings do not predict maternal positive affect and do not function as mediators of maternal depression in predicting positive affect. In most instances, testing for mediation was not even possible as depression was not significantly correlated with positive affect, the first pre-condition in assessing mediator status. Thus, it would seem that neither maternal depression nor ratings of child problem behaviour is a contributor to maternal displays of positive affect.

Conclusion 2. In contrast to the prediction of positive affect, child ratings are a mediator of the relationship of depression and aversive parenting when considering distal depression (e.g., intake, week1, week2, week3 predicting week4), accounting for 14-25% of the variance in aversive parenting. In all instances, the value of the contribution of depression is considerably lessened and, in the vast majority of instances, the previously significant relation becomes nonsignificant. The mediation by ratings of distal depression is most clearly seen when considering intake depression as predicting aversive parenting. When significance of depression continued to occur after child ratings were entered into the regression, typically these were relations closer in time (e.g. week 2 depression predicting week 3 aversive parenting), which is addressed in the third conclusion below.

This pattern of results emerged with both the daily (PDR-D) and weekly mood ratings (CESD); the values obtained in these regressions (Beta, R^2_{total}) are fairly similar, despite the different measures. Also, similar results were achieved whether using the parental intensity ratings of child problem behaviour (Eyberg-Intensity) or parental categorization of behaviours as a management problem (Eyberg-Problem).

These results confirm and extend the well-established association of maternal depression with aversiveness towards

the child. First, they show that depression is a significant predictor of aversive parenting, when considered in isolation. Second, they clarify this association as an indirect effect a) when depression is a distal contextual factor and b) when maternal appraisals of child problem behaviour are considered simultaneously with depression.

These results point to the potent influence of maternal depression on the cognitive appraisal of the child as one factor underlying aversive parenting. Mothers who rated themselves as more depressed tended to make more negative appraisals of their child. It is these distal negative appraisals that impact on the mother's later parental behaviour, such that the more problematic their child's behaviour was viewed to be, the greater the aversiveness that was directed to that child. The predictive power of distal maternal perceptions attest to their enduring effect.

This raises the possibility that a mother's present-day aversive actions towards her child are related to her historical view of her child. An issue associated with this finding is whether negative perceptions in and of themselves constitute a significant risk factor for increased aversive parenting, or whether it is only in the context of adverse parental personal factors, like depression, that perceptions are associated with increased risk. If the latter process is key, then one would expect that proximal depression would be mediated also by ratings of the child.

Conclusion 3. Child ratings do not function as a mediator of the relationship of depression and aversive parenting when considering proximal relations (e.g., week 4 depression and child ratings predicting week 4 aversive parenting). Contemporaneous depression and child ratings exert significant effects on aversive parenting, accounting for 20-33% and 14-37% of the variance in aversive parenting respectively. Thus, on a given day, when a mother is either feeling depressed and/or viewing her child as behaviourally problematic, she will be more likely to exhibit aversiveness towards the child. This identifies a matching of both negative mood state and negative perceptions to negative parental behaviour. There was one exception to this pattern: child ratings failed to exert a significant proximal effect in predicting week 2 parenting.

Proximal depression continues to be a significant predictor of aversive parenting when both depression and ratings are entered into the regression equation. That is, even when one considers how the child's behaviour is perceived, maternal depression continues to be a significant predictor of aversiveness. This raises questions around how proximal depression is linked to aversiveness, having ruled out cognitive mediation as a strong explanatory process. It may be that present depression permeates a parent's affective behaviour such that the negatively-toned interactions with the child are an extension of the

irritable and sad affect that is a part of depression. As increased negative and decreased positive strategy use coincide with depression, it may be that negatively-based parenting strategies are readily accessed, via biased, mood-congruent memory search, memory retrieval, and/or response tendencies.

Proximal child ratings are a significant predictor of aversive parenting, above and beyond the contribution of maternal depression. Thus, despite a mother's self-reported level of depression, the more negatively she views her child's behaviour, the more aversive she is in tone and strategy-use. Again, the current study did not assess the appropriateness or validity of either the aversive parental response or parental ratings. For example, potentially punitive responses (e.g., aggressing against the child) are not differentiated from potentially appropriate responses (e.g., time-out).

As with depression, the specific nature of the process by which proximal perceptions impact on aversive parenting remains to be determined. It may occur as a function of being a well-established, almost automatic, association. It may be determined by other mediators not investigated presently, such as attributional biases of responsibility or intentionality. Considering this finding together with the positive finding of cognitive mediation of distal depression confirms maternal perceptions as a potent influence on

parenting. As a result, it identifies appraisal of child behaviour as a prime intervention target when aversive parenting is considered to be at issue as well as when maternal depression has been reported. This is an important notice to such interventions as parent training, where perceptions of the child are rarely targeted. The impetus to intervene with parental perceptions is unaltered by the objectivity of such appraisals. Whether other people find the child's behaviour difficult is moot; the fact that the parent is identifying it argues for a more in-depth analysis of the process by which such appraisals result in aversiveness for an individual parent. For example, for some parents, negative perceptions may be related to perceived characterological flaws in the child (e.g., "bad" child) or some other inherent deficit (e.g., cognitively does not "get" rules). For other parents, it may be a function of an over-emphasis on negative behaviour, a lack of appreciation of developmental standards for child difficult behaviour, and/or an underweighting of child positive behaviours.

Table 16.

**Maternal Depression and Ratings of Child Problem Behaviour
Predicting Week 4 Maternal Aversive Parenting**

Independent variables	rIV.M	Week 4 rIV.C	Beta	R ² total
Intake:				
1. BDI	.54*	.36*	.21	.13
2. Eyberg-Intensity			.28*	.18

1. BDI	.54*	.36*	.20	.13
2. Eyberg-Problem			.29*	.19

1. CESD-Intake	.36*	.29*	.17	.09
2. Eyberg-Intensity			.33*	.18

1. CESD-Intake	.40*	.29*	.16	.09
2. Eyberg-Problem			.34*	.18

Week 1:				
1. PDR-D w1	.28*	.26*	.13	.07
2. PDR-BP w1			.45*	.25

1. CESD w1	.37*	.28*	.12	.08
2. PDR-BP w1			.44*	.25

Week 2:				
1. PDR-D w2	.27*	.28*	.19	.08
2. PDR-BP w2			.34*	.19

1. CESD w2	.27*	.29*	.19	.08
2. PDR-BP w2			.34*	.19

Week 3:				
1. PDR-D w3	.26*	.22*	.13	.05
2. PDR-BP w3			.32*	.14

1. CESD w3	.21*	.24*	.13	.05
2. PDR-BP w3			.32*	.14

Independent variables	Week 4		Beta	R ² total
	rIV.M	rIV.C		
Week 4:				
1. PDR-D w4	.23*	.38*	.33*	.14
2. PDR-BP w4			.20*	.18

1. CESD w4	.25*	.26*	.20**	.07
2. PDR-BP w4			.23*	.12

* $p < .05$; ** $p < .06$

Note. IV-independent variable (depression);

M=mediator variable (child ratings);

C=criterion (aversive parenting)

Beta=standardized regression coefficient, with depression entered first and child ratings entered second

Eyberg= Eyberg Child Behavior Inventory

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

Table 17.

**Maternal Depression and Ratings of Child Problem Behaviour
Predicting Week 3 Maternal Aversive Parenting**

Independent variables	Week 3		Beta	R ² total
	rIV.M	rIV.C		
Intake:				
1. BDI	.54*	.34*	.13	.11
2. Eyberg-Intensity			.38*	.22

1. BDI	.54*	.34*	.15	.11
2. Eyberg-Problem			.33*	.19

1. CESD-Intake	.36*	.32*	.18	.10
2. Eyberg-Intensity			.38*	.23

1. CESD-Intake	.40*	.32*	.18	.10
2. Eyberg-Problem			.34*	.20

Week 1:				
1. PDR-D w1	.28*	.28*	.18	.08
2. PDR-BP w1			.35*	.19

1. CESD w1	.37*	.34*	.22*	.11
2. PDR-BP w1			.32*	.20

Week 2:				
1. PDR-D w2	.27*	.29*	.23*	.08
2. PDR-BP w2			.21*	.12

1. CESD w2	.27*	.32*	.27*	.10
2. PDR-BP w2			.20*	.14

Week 3:				
1. PDR-D w3	.26*	.34*	.28*	.11
2. PDR-BP w3			.21*	.15

1. CESD w3	.21*	.32*	.28*	.11
2. PDR-BP w3			.23*	.15

* $p < .05$

Note. IV= independent variable (depression)

M= mediator variable (child ratings)

C= criterion (aversive parenting)

Beta= standardized regression coefficient entering

1) depression 2) child ratings

Eyberg= Eyberg Child Behavior Inventory

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

Table 18.

**Maternal Depression and Ratings of Child Problem Behaviour
Predicting Week 2 Maternal Aversive Parenting**

Independent variables	rIV.M	Week 2		R ² total
		rIV.C	Beta	
Intake:				
1. BDI	.54*	.37*	.21	.14
2. Eyberg-Intensity			.30*	.20

1. BDI	.54*	.37*	.18	.14
2. Eyberg-Problem			.34*	.22

1. CESD-Intake	.36*	.36*	.24*	.13
2. Eyberg-Intensity			.32*	.22

1. CESD-Intake	.40*	.36*	.21*	.13
2. Eyberg-Problem			.35*	.23

Week 1:				
1. PDR-D w1	.28*	.24*	.16	.06
2. PDR-BP w1			.29*	.14

1. CESD w1	.37*	.38*	.30*	.15
2. PDR-BP w1			.23*	.19

Week 2:				
1. PDR-D w2	.27*	.28*	.24*	.08
2. PDR-BP w2			.14	.10

1. CESD w2	.27*	.28*	.24*	.08
2. PDR-BP w2			.14	.10

* p<.05

Note. IV-independent variable (depression)

M-mediator variable (child ratings)

C-criterion (aversive parenting)

Beta-standardized regression coefficient entering
1) depression 2) child ratings

Eyberg= Eyberg Child Behavior Inventory

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression
Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

Table 19.

**Maternal Depression and Ratings of Child Problem Behaviour
Predicting Week 1 Maternal Aversive Parenting**

<u>Independent variables</u>	<u>rIV.M</u>	<u>Week 1 rIV.C</u>	<u>Beta</u>	<u>R²total</u>
Intake:				
1. BDI	.54*	.36*	.20	.14
2. Eyberg-Intensity			.34*	.22

1. BDI	.54*	.36*	.17	.14
2. Eyberg-Problem			.38*	.24

1. CESD-Intake	.36*	.34*	.20	.11
2. Eyberg-Intensity			.37*	.23

1. CESD-Intake	.40*	.34*	.18	.11
2. Eyberg-Problem			.40*	.25

Week 1:				
1. PDR-D w1	.28*	.38*	.26*	.14
2. PDR-BP w1			.37*	.26

1. CESD w1	.37*	.40*	.27*	.16
2. PDR-BP w1			.35*	.26

* $p < .05$

Note. IV=independent variable (depression)

M=mediator variable (child ratings)

C=criterion (aversive parenting)

Beta=standardized regression coefficient entering
1) depression 2) child ratings

Eyberg= Eyberg Child Behavior Inventory

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression
Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

Table 20.

**Maternal Depression and Ratings of Child Problem Behaviour
Predicting Week 4 Maternal Positive Affect**

Independent variables	rIV,M	Week 4		R ² total
		rIV,C	Beta	
Intake:				
1. BDI	.54*	-.19	-.11	.04
2. Eyberg-Intensity			-.15	.05

1. BDI	.54*	-.19	-.16	.04
2. Eyberg-Problem			-.06	.04

1. CESD-Intake	.36*	-.20	-.14	.04
2. Eyberg-Intensity			-.16	.06

1. CESD-Intake	.40*	-.20	-.17	.04
2. Eyberg-Problem			-.08	.05

Week 1:				
1. PDR-D w1	.28*	-.07	-.06	.00
2. PDR-BP w1			-.03	.01

1. CESD w1	.37*	-.24*	-.25*	.06
2. PDR-BP w1			.05	.06

Week 2:				
1. PDR-D w2	.27*	-.13	-.09	.02
2. PDR-BP w2			-.16	.04

1. CESD w2	.27*	-.11	-.07	.01
2. PDR-BP w2			-.16	.04

Week 3:				
1. PDR-D w3	.26*	-.13	-.10	.02
2. PDR-BP w3			-.12	.03

1. CESD w3	.21*	-.20	-.18	.04
2. PDR-BP w3			-.11	.05

Week 4:				
1. PDR-D w4	.23*	-.25*	-.25*	.06
2. PDR-BP w4			-.02	.06

1. CESD w4	.25*	-.14	-.13	.02
2. PDR-BP w4			-.04	.02

* $p < .05$

Note. IV-independent variable (depression)

M=mediator variable (child ratings)

C=criterion (positive affect)

Beta-standardized regression coefficient,
entering 1) depression 2) child ratings

Eyberg= Eyberg Child Behavior Inventory

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression
Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

Table 21.
Maternal Depression and Ratings of Child Problem Behaviour
Predicting Week 3 Maternal Positive Affect

Independent variables	rIV,M	Week 3 rIV,C	Beta	R ² total
Intake:				
1. BDI	.54*	-.07	-.05	.01
2. Eyberg-Intensity			-.03	.01

1. BDI	.54*	-.07	-.02	.01
2. Eyberg-Problem			-.09	.01

1. CESD-Intake	.36*	-.15	-.15	.02
2. Eyberg-Intensity			-.00	.02

1. CESD-Intake	.40*	-.15	-.13	.02
2. Eyberg-Problem			-.05	.02

Week 1:				
1. PDR-D w1	.28*	.01	-.00	.00
2. PDR-BP w1			-.06	.00

1. CESD w1	.37*	-.20	-.26*	.04
2. PDR-BP w1			.16	.06

Week 2:				
1. PDR-D w2	.27*	-.08	-.07	.01
2. PDR-BP w2			-.03	.01

1. CESD w2	.27*	.02	.03	.00
2. PDR-BP w2			-.06	.00

Week 3:				
1. PDR-D w3	.26*	.03	.05	.00
2. PDR-BP w3			-.08	.01

1. CESD w3	.21*	-.03	-.02	.00
2. PDR-BP w3			-.07	.01

* p<.05

Note. IV=independent variable (depression)

M=mediator variable (child ratings)

C=criterion (positive affect)

Beta=standardized regression coefficient, entering
 1) depression 2) child ratings

Eyberg= Eyberg Child Behavior Inventory

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression
 Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

Table 22.

**Maternal Depression and Ratings of Child Problem Behaviour
Predicting Week 2 Maternal Positive Affect**

Independent variables	rIV.M	Week 2		R ² total
		rIV.C	Beta	
Intake:				
1. BDI	.54*	-.22*	-.17	.05
2. Eyberg-Intensity			-.08	.05

1. BDI	.54*	-.22*	-.18	.05
2. Eyberg-Problem			-.06	.05

1. CESD-Intake	.36*	-.15	-.10	.02
2. Eyberg-Intensity			-.14	.04

1. CESD-Intake	.40*	-.15	-.10	.02
2. Eyberg-Problem			-.13	.04

Week 1:				
1. PDR-D w1	.28*	.08	.10	.01
2. PDR-BP w1			-.06	.01

1. CESD w1	.37*	-.17	-.18	.03
2. PDR-BP w1			.04	.03

Week 2:				
1. PDR-D w2	.27*	-.08	-.03	.01
2. PDR-BP w2			-.16	.03

1. CESD w2	.27*	-.10	-.06	.01
2. PDR-BP w2			-.15	.03

* $p < .05$

Note. IV-independent variable (depression)

M=mediator variable (child ratings)

C=criterion (positive affect)

Beta=standardized regression coefficient, entering
1) depression 2) child ratings

Eyberg= Eyberg Child Behavior Inventory

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression
Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

Table 23.

**Maternal Depression and Ratings of Child Problem Behaviour
Predicting Week 1 Maternal Positive Affect**

<u>Independent variables</u>	<u>rIV.M</u>	<u>Week 1 rIV.C</u>	<u>Beta</u>	<u>R²total</u>
Intake:				
1. BDI	.54*	-.00	.07	.00
2. Eyberg-Intensity			-.13	.01

1. BDI	.54*	-.00	.04	.00
2. Eyberg-Problem			-.07	.00

1. CESD-Intake	.36*	-.06	-.03	.00
2. Eyberg-Intensity			-.08	.01

1. CESD-Intake	.40*	-.06	-.05	.00
2. Eyberg-Problem			-.03	.01

Week 1:				
1. PDR-D w1	.28*	.09	.07	.01
2. PDR-BP w1			.06	.01

1. CESD w1	.27*	-.12	-.17	.01
2. PDR-BP w1			.14	.03

* $p < .05$

Note. IV=independent variable (depression)

M=mediator variable (child ratings)

C=criterion (positive affect)

Beta=standardized regression coefficient, entering

1) depression 2) child ratings

Eyberg= Eyberg Child Behavior Inventory

BDI = Beck Depression Inventory

CESD = Center for Epidemiological Studies' Depression Scale

PDR-D = Parent Daily Report - Depression

PDR-BP= Parent Daily Report - Behavior Problems

Other contextual effects: Socioeconomic status, child age and gender.

Factors considered important in qualifying child development outcome include socioeconomic status, child gender, and child age. Consequently, the potential impact of these variables were explored in additional analysis. First, these variables were correlated with study variables to identify any significant relations; if any significant relations were found, they were employed in the multiple regression analyses.

Child age and gender were not significantly correlated with any demographic or study variable and were not further considered (see Appendix G for further discussion). Socioeconomic status (SES) and a composite of SES-related variables, labelled socioeconomic disadvantage (SED), correlated significantly with "negative" study variables (i.e., maternal depression, ratings of problem child behaviour, aversive parenting). Consequently, it was entered first in the multiple regression analyses to ascertain whether the study findings continued to hold when the influence of SES was removed. As shown in Appendix D, the mediator effect found in this study remained even when controlling for SES. Additionally, as SED has been conceptualized as an index of family stress, SED as a moderator of maternal depression was considered. These analyses failed to identify a consistent pattern of significant results (see Appendix D for further details).

Summary of Results

To summarize, maternal aversive parenting and not maternal positive affect emerges as the domain of parent-to-child behaviour with which maternal depression and ratings of child problem behaviour are implicated. Indeed, what predicts maternal positive affect remains an open question, as maternal depression, contextual stress, SES, SED, life stress, social isolation, and perceptions of child problem behaviour bore no positive relation.

Also, contextual stress did not predict aversive parenting and positive affect beyond the impact of maternal depression, showing that aversive social contacts and daily hassles do not reveal the deleterious effects of stress to parenting. No support for the moderator function of contextual stress or SED was found.

These results do identify maternal depression as operating through two distinct pathways, one direct and one indirect. Proximal maternal depression was found to exert a direct effect on aversive parenting. As maternal depression increases, so too does aversiveness towards the child. This relation holds when considering the influence of SES and maternal perceptions of child problem behaviour. Similarly, proximal maternal perceptions of child problem behaviour were found to exert a direct effect on aversive parenting, above and beyond the contribution of maternal depression and SES. Thus, on days when mothers are feeling depressed

and/or viewing their child as problematic, they will be more likely to respond to the child in negative tones, use negative control strategies more frequently, and use positive control strategies less frequently.

In contrast, depression which is not contemporaneous, whether it be a month or week previous to parenting, exerts an indirect effect on aversive parenting, through its influence on perceptions of child problem behaviour. Thus, having experienced depressive symptoms places a mother at risk for aversive parenting, by virtue of being more likely to appraise the child's behaviour negatively. It is these perceptions that seem to "stick" over time, such that they are predictive of subsequent aversive parenting. These findings qualify the model proposed in the introduction as applying to distal relations rather than contemporaneous influences.

In short, while these findings identify a dual process in the impact of maternal depression on aversive parenting, they also attest to the persistence of influence of maternal perceptions. In this regard, maternal perceptions do appear to be the more robust influence on aversive parenting. These findings show the utility of simultaneously considering important constructs in an attempt to achieve greater sensitivity to process mechanisms.

CHAPTER IV - DISCUSSION

The discussion is divided into five sections. The first three match the three main research questions. The fourth section presents limitations of the current study, and the fifth section discusses future directions for research.

Section 1 - Discussion of Research Question Results.

Question 1. What is the relationship of maternal depression to maternal positive affect and aversive parenting as it spans across time?

Discussion of the two conclusions identified from the correlational analyses will be presented separately. First, the lack of association between depression and positive affect and second, the positive association between depression and aversive parenting will be considered.

Conclusion 1. The lack of association between maternal depression and positive affect.

While maternal depression was predicted to be negatively associated with maternal positiveness, no predictions were made for maternal positive affect, since this definition developed during analyses of the interactional codes. As noted, previous research links maternal depression to reduced maternal positiveness, defined broadly (e.g., Puckering, 1989). The present study's negative finding seems to run counter to popular belief. Gelfand and Teti (1990), in a review of depression in mothers and child adjustment, noted that a conclusion drawn from an

extensive set of research (i.e., Weissman and colleagues) was that "a depressed mother's uninvolved and inability to feel affection for her child causes her to treat her child harshly" (p.332). However, there is much research to contradict this generalized conclusion.

A close inspection of empirical findings reveal an outstanding lack of empirical support for a link between depression and observed affection to the child across both community and clinical populations, and a limited link between depression and positive affect, with positive findings almost exclusively found in clinically depressed populations. Thus, a detailed inspection of the current research clearly supports the current study's finding of a nonsignificant association between maternal depression and positive affect.

The present definition of positive affect includes parental behaviours that are contingent as well as noncontingent on child conduct. In this regard, this definition approximates a behavioural style that could be described as warmth (Maccoby & Martin, 1983). This definition is distinct from many studies addressing "positive affect" in which codes for positive control strategies are typically combined with positive affect, flat affect, and sometimes negative affect. These definitional differences are highlighted to show that positive affect alone shows limited association to maternal depression.

Studies measuring maternal depressive symptomatology, rather than clinical levels of depression, have failed to show a robust association between positive affect and maternal depression scores. Panaccione and Wahler (1986) found that contemporaneous depression scores and mother expressed affection were not correlated significantly, defining affection as physical affection and positive behaviours. Similarly, Rogers and Forehand (1983) failed to find any group differences when comparing low, medium, and high scorers on the Beck Depression Inventory in terms of observed maternal attention and rewards to the child.

In contrast, a study of first-time mothers and their infants found mothers scoring as depressed during pregnancy or at 1 month postpartum displayed less affectionate behaviour to their infants at 1 month and 3 months postpartum, as compared to nonsymptomatic mothers (Fleming et al., 1988). However, these group differences were no longer evident when the child was 16 months of age. Given that postpartum mood was highly correlated with fatigue, these authors suggested that factors such as fatigue "may be the primary associates of a woman's developing feelings about being a mother and caring for her baby" (p.78). Further, the measure of depression was a 10-item adjective checklist, tapping a wide range of affects, rather than a depression inventory. Considering this and the finding that group differences dissipated over time, the question arises

as to whether self-reported depression in this study may be more accurately labelled adjustment stress. Further, it should be noted that Fleming et al.'s observational data were based on 10 to 20 minute single sessions, in contrast to the multiple observations of the other studies. Thus, the weight of the evidence suggests that self-reported depression is not associated with positive affect.

Considering studies where clinician or researcher interviews with the mother serve as the basis for diagnosing depression, maternal depression has been significantly associated with maternal positiveness, defined very broadly. For example, Campbell et al. (1992) found that postpartum depressed mothers scored lower on "positive engagement" than nondepressed women at the 2 month home visit, based on global home ratings. However, this association seems to be accounted for by those mothers who were substantially depressed; mothers who were still depressed at 6 months postpartum were the ones who were significantly less positive at the 2 month mark. As positiveness included flatness of affect, in addition to warmth and involvement, it is difficult to make conclusions about positive affect specifically.

Similar findings based on home ratings were reported by Cohn et al. (1990). Depressed mothers were rated as significantly less "positive" than nondepressed mothers, again with positive affect being defined as flatness of

affect, disengagement and negative affect, in addition to warmth. These authors found more specific results from the observed interactions. Only depressed mothers of boys displayed lowered positiveness. Importantly, only "low positive" behaviours (i.e., smiling, positive vocalizations) were implicated; no differences were found for "high positive" maternal behaviours (exaggerated expressions and smiling combined with vocalizations). Thus, when maternal "positive" behaviours are defined as distinct from negative and flat affect and behaviours, a clear trend emerges: maternal clinical depression is associated with decreased low-intensity positive affect, but not with high-intensity positive affect.

This trend is strongly supported in studies of depressed mothers and their older children which have isolated positive affect. DeMulder and Radke-Yarrow (1991) found no significant difference between depressed and well mothers in "pleasure and joy" (e.g., smiling) and "tenderness and affection" (verbal, physical demonstrations of love). Depressed mothers were significantly different from well mothers in their lower rates of "neutral/pleasant" (neutral to pleasant tone and expression). Similarly, Hops et al. (1987) found no association between clinical depressed status of mothers and "caring" affect (warmth and affection). A significant effect for "happy" affect (pleasure and enthusiasm) was found: normal mothers

displayed higher rates than depressed mothers, with no difference between depressed only and depressed-maritally stressed groups.

Taken together, these studies show that it is the low-intensity positive affect (pleasant, happy tone) that is affected by clinical depression. In the context of the current study's results, it is suggested that clinical depression, and not depressive symptomatology, interferes with the mother's ability to display sustained positive affect, that is, an overall positive affective tone. Clinically depressed mothers are less "upbeat" in general tone, not reaching the heights of positiveness that nondepressed mothers do. However, neither clinical depression nor depressive symptomatology seems to interfere with displays of warmth to the child, which are more discrete and time-limited than overall pleasant tone or overall happy affect. Further, neither clinical depression nor depressive symptomatology is significantly associated with a critical maternal behaviour, affection to the child.

Future research directions: The need for a functional analysis of positive affect.

What meaning to attach to the positive affect displayed by depressed mothers is an entirely separate issue that has received limited research attention. In reviewing data from their extensive research efforts, Radke-Yarrow and Zahn-Waxler (1990), cite anecdotes suggesting that with the

onset of mild stress, anxious and depressed mothers abruptly intensify their interaction with their child, including physical contact and affection. This example highlights two important, related factors: (1) maternal positive affect that seems contingent upon contextual stress and independent of child behaviour and (2) the effect of maternal positive affect on the mother and child.

A study by Radke-Yarrow et al. (1993) emphasizes the issue of the stimulus for maternal positive affect. In this study, the amount of exposure to the child of maternal depressive episodes was expressed as a percent of the child's life. Curiously, these authors found that mothers of sons in the high-exposure group displayed greater tenderness-affection than control and low-exposure groups, leading them to query whether depressed mothers "make a stronger effort to shield their sons" (p.693) from their depression by using increased affection.

The positive effects to the child of maternal positive affect is suggested by the finding that depressed mothers who are able to utilize adaptive parenting strategies such as modulated control, perspective-taking, and promotion of prosocial behaviour in toddlerhood have children with fewer behaviour problems at age 5 (Zahn-Waxler et al., 1990). Given this interactional context, it seems understandable that 21-53% of infants and toddlers of depressed mothers are scored as having secure attachments (Lyons-Ruth, Zöll,

Connell, & Grunebaum, 1986; Radke-Yarrow, Cummings, Kuczynski, & Chapman, 1985).

These results (and the results from the moderator and mediator hypotheses) highlight an important basic question: what predicts maternal positive affect? This research emphasis in dysfunctional parenting is challenged, however, by recent work showing proactive childrearing (anticipatory guidance and affectively positive, educative exchanges between mother and child) to show greater prediction of fewer behaviour problems in 4 year olds than punitive control (Petit & Bates, 1989). Similarly, McCord (1993) cites research to suggest that level of parental affection distinguishes delinquent from nondelinquent siblings; "friendliness" of parent-child interactions accounts for the retardation of delinquency during adolescent years. These findings compel research to include parental positive affect as a priority.

Conclusion 2. The positive association between maternal depression and aversive parenting.

Aversive parenting was found to be positively associated with maternal depression across the four weeks, as was predicted. The current study's definition is consistent with other work on aversive parenting in its inclusion of both negative affect and behavior. The present study's definition also included the lack of positive strategies (helping, approving). The maternal depression-aversive

parenting association is supported by numerous other interactional studies employing community samples (e.g., Panaccione & Wahler, 1986), postpartum depressed samples (e.g., Campbell et al., 1992; Cohn et al., 1986; Field et al., 1990; Lyons-Ruth et al., 1986), clinically depressed samples with older children (e.g., Hops et al., 1987; DeMulder & Radke-Yarrow, 1991), clinically depressed samples with adolescents (e.g., Tarullo et al., 1994), and samples of clinic-referred conduct problem children (e.g., Webster-Stratton & Spitzer, 1991). The variation in these studies as a function of population, type of interaction, length of interaction, and age of child, confirms their finding of a maternal depression-aversive parenting association as a robust one. More germane to the current study, this literature shows a convergence across the range of depressive symptoms, from mild to clinical depression.

Question 2. Does maternal contextual stress function as a moderator of depression? Does this relation vary across time?

Both conclusions in the results section presented the same general finding: the failure to confirm contextual stress as a moderator of depression in predicting parenting. Because there are issues with the nature of contextual stress in this study, the following discussion will focus on the present study's specific definition of contextual stress and directions for future research on contextual stress.

Considering the modest reliability of the daily contextual stress index, no affirmative answer can be provided to the question of moderation of depression. It is clear that contextual stress (as defined herein) did not act as a moderator of depression in predicting maternal aversive parenting and positive affect. The only other study examining parent-child interactions to utilize this study's measure was Dumas (1986a). However, the present study differs on a number of dimensions. In the Dumas (1986a) study, social isolation was more of a focus (i.e., the number of neutral interactions was included with aversive interactions; the number of interactions with relatives and helping agents versus with friends was emphasized; the number of aversive daily events was not used). Further, the results were based on fewer families than the present study (N=14 versus N=95) who were also low-income and referred for child behaviour and parenting problems. Thus, it may be that only in high-risk families does contextual stress emerge as influential in aversive parenting.

Alternatively, it may be factors related to social insularity, such as socioeconomic disadvantage, that are the more important variables. Unfortunately, Dumas (1986a) did not tease out the contribution made by insularity in the context of socioeconomic disadvantage. In analyzing parent training treatment outcome, Dumas and Wahler (1983) found that SES and insularity together accounted for almost

half the variance. Similarly, Dumas (1986b) concluded that variability in parent training outcome may be almost entirely accounted for by socioeconomic variables, identifying it as an important qualifier variable. However, socioeconomic disadvantage did not emerge as a moderator of maternal depression in the present study (see Appendix D).

The importance of socioeconomic disadvantage as a indicator of contextual stress in predicting parenting is supported by other researchers. For example, Forgatch et al. (1990) found maternal stress predicted aversive parenting, defining stress as a combination of aversive social events (i.e., negative life events, recent hassles) and disadvantage (i.e., financial problems, family health problems). Similarly, Webster-Stratton (1985) found that successful response to parent training (defined as a 50% reduction from baseline in maternal verbal and physical aversiveness) was predicted by the number of negative life experiences over the past year combined with socioeconomic disadvantage, accounting for 26% of the variance. However, it may be that socioeconomic disadvantage is best considered as a separate dimension of contextual stress. Socioeconomic disadvantage was not correlated with other contextual stress variables (life stress, daily hassles) (see Appendix D).

Apart from the present and Dumas (1986a) studies, contextual stress has not been measured elsewhere using the CIC. These results suggest questionable utility

of the CIC as an indicator of contextual stress and, more importantly, whether aversive social contacts and events are influential in parenting. An important point to consider is that Dumas' (1986a) sample characteristics (low SES, single parent status for 6/14 mothers, referred for child behavior problems) are all associated with maternal depression, but depression was not taken into account in this study. Thus, the possibility exists that the insularity findings would have dissipated had depression been considered also.

Alternatively, a reconceptualization of aversive social contexts may be required. It is interesting to note the focus in Dumas' (1986a) study on the weighting of contact with relatives and agencies. It may be that the "meaning" or value placed on an interactant and hence the interaction, as well as the extent and nature of historical interactions, are important dimensions to consider (Monroe & Steiner, 1986). The current study's lack of positive results may stem from the fact that while a wide range of social interactants were sampled (e.g., co-workers, neighbours etc.) and interactions were rated as aversive, their ability to have an impact may have been a function of the value placed on the particular social relationship. Or, it may be that maternal depression was not the most important parental characteristic to consider for moderation by social stress. Other factors, such as personality, may prove more fruitful.

Reconceptualizing contextual stress: intimacy level of

interactants. Considering the partner relationships among depressed women, Hammen (1992) identified paternal deviance and spousal/partner "abandonment" as common features. Coyne and DeLongis (1986) argue that a key factor in accounting for the positive effects of support is the context of a satisfactory, confiding intimate relationship. The effect of intimate support appears to translate into more competent parenting. For example, based on a community sample, parents who received higher marital harmony scores, based on a discussion task, were found to show more approval and physical affection to their child (Easterbrooks & Emde, 1988). Thus, consideration of the intimacy level of social interactants may be important.

Research supports the notion of evaluating more carefully the type of social interactants. For example, Crittenden (1985) found that adequate-care mothers' social networks were typified by long-standing friendships and periodic contact with relatives, whereas the maltreating mothers had short-term friendships and frequent to very frequent contact with relatives. Thus, the networks of inadequate-care mothers may reflect a pattern of emotional overinvolvement in relationships which may have the effect of social stress, rather than the intended social support. Support research has shown consistently the negative effects of overinvolved relationships (Coyne & DeLongis, 1986).

These results also suggest that the "fit" or continuity

of current support with historical sources may be important (Monroe & Steiner, 1986). There is evidence for the link between historically-poor supports, current social stress, and aversive parenting; historically poor supports in the context of low partner support is related to aversive parenting (Belsky et al. 1990; Crockenberg, 1987).

Reconceptualizing contextual stress: moderation of parental personality.

Coyne and DeLongis (1986) note that selection factors may operate in regard to social events: particular personalities may be more likely to experience events as aversive and may actively contribute to them as such. For example, Hammen (1991) found that unipolar depressed women had the most exposure to negative stressors overall, as compared to medically ill, bipolar depressed, and well women, which were accounted for by the greater proportion of "dependent" stress - interpersonal conflict with romantic partners, children, and authority figures. Thus, it may be fruitful to consider the way social support and stress are experienced in the context of how it is influenced by a person's characteristics and circumstances.

Question 3. Do maternal ratings of child behavior problems function as a mediator of the depression-parenting relationship? Does this relation vary across time?

What is important about the present study is that it

provides qualification to the proposed model: cognitive mediation of depression is indicated only when depression was measured distally and only as it related to aversive parenting. In contrast, proximal depression predicted aversive parenting, even when proximal maternal perceptions were considered. Proximal maternal perceptions predicted aversive parenting, beyond the influence of proximal maternal depression. Thus, proximal maternal depression and perceptions were found to be direct, contemporaneous influences on aversive parenting. Finally, these results are bolstered by the finding that even when socioeconomic status is taken into account, cognitive mediation of distal depression and the direct effect of proximal depression and perceptions continue to predict aversive parenting. These three conclusions from the results section will be discussed separately.

Conclusion 1. No relationship of maternal depression and ratings of child problem behaviour and positive affect towards the child.

As noted, testing for mediation with respect to maternal positive affect was not possible given its nonsignificant association with both maternal depression and perceptions. The lack of association between depression and positive affect was discussed above. This section will consider the lack of association between maternal ratings of child problem behaviour and positive affect.

Research has tended to ignore the positive aspects of parent-child interactions (Gardner, 1987). Studies that have examined parental positive behaviour have found it is not significantly related to parental perceptions of child problem behaviour. Webster-Stratton (1985) found that mothers of children referred to a conduct-disorder clinic rated their child as significantly more problematic on the Eyberg Inventory than control mothers, yet these mothers were observed to praise their child more frequently than mothers of nonclinic children. Also, no significant difference in maternal physical positive behaviour was noted. In a review of the research on positive reinforcement with conduct problem children (whose mothers rate them highly on problem behaviour measures), Forehand (1986) found that observed parental positive reinforcement did not differentiate parents of children referred for conduct problems versus non-clinic children. Thus, it seems that maternal ratings of child problem behaviour are not reliably linked to maternal positiveness, defined broadly.

As noted, interactional research typically combines positive affect and positive strategy. In post-hoc analyses, Webster-Stratton (1985) isolated maternal positive affect and found that mothers who had rated their children as problematic showed significantly fewer smiles, expressions of warmth and enthusiasm, and supportive comments than mothers who had not rated their children as

highly problematic. However, the clinic group displayed significantly greater levels of socioeconomic disadvantage than the nonclinic group. Thus, it remains unclear as to whether child ratings are related to maternal positive affect or whether such an association emerges only when clinical levels of child difficulties are reported in the context of socioeconomic disadvantage.

Conclusion 2. The indirect effect of maternal depression: Mediation of the relationship between distal maternal depression and aversive parenting by distal maternal ratings of the child.

As detailed earlier, there is strong theoretical support for cognitive mediation of depression, and in particular, the mediational role of maternal perceptions. The link between depression and a negative perceptual bias is supported by a substantial body of experimental work in depression (e.g., see Matt et al., 1992) and mother-child interactions (e.g., see Richters, 1992). Maternal depression seems to create a unique lens through which information, including a child's behaviour, is filtered in a mood-congruent fashion. As Conrad and Hammen (1989, noted "nondepressed adults are known to hold rosier views than warranted by reality, whereas depressed adults are not so 'protected' by positive but unrealistic perceptions. It may also be that their own painful symptoms of dysphoria make them more sensitive to maladaptive behaviours in their

children" (p. 666). Thus, more problem child behaviour would be perceived by the depressed mother than when she is not depressed, either as a function of more or less accuracy in perceptions. As a consequence, the increased aversiveness towards the child would seem to be a function of the mother matching negative parental behaviour to perceived negative child behaviour. The present result of cognitive mediation of distal, but not proximal, maternal depression identifies a need to account for the lack of direct effect of distal depression, a finding supported by recent research separating current from historical depression (e.g., Tarullo et al., 1994). Exploring the nature of cognitive processes under depression suggests why cognitive mediation predominates distal depression.

In their review of the information-processing research in depression, Hartlage et al. (1993) use the concepts of effortful and automatic information processing to outline differences in cognitive phenomenon for distal and current depressed mood. To define terms, effortful processing requires attention and is invoked heavily for such tasks as interpersonal problem-solving, decision-making, controlled search of memory, hypothesis-generation, organization and structure, encoding of semantic processing, and learning. Depression is considered to impair effortful processing.

In contrast, automatic processing does not require attention, occurs without intention or control, and is

invoked heavily for such tasks as frequency judgements, retrieving self-referent content, and some attributional inferences. Consistent with Beck's cognitive model, Hartlage et al. (1993) view depression as non-disruptive to automatic processing, except in cases of severe depression.

Considering child-rearing as a cognitive activity, it would be expected that under normative circumstances effortful processes are heavily implicated, as parenting represents a complex interpersonal problem-solving task. Automatic processing (e.g., attributions) would be expected to be involved as well, although not as substantially. However, in the context of depression, child-rearing would be expected to be based more heavily on automatic processing. This postulation concurs with the general conclusion drawn from a review of interactional research that a deficit in the level of maternal effortfulness exists with maternal depression (Downey and Coyne, 1990). Also, it is noted that the focus on automatic processing to the detriment of effortful processing figures in models of abusive parenting (e.g., Milner, 1993).

Hartlage et al. (1993) identify concomitants of a predominant automatic processing style as a narrowing of attention and/or a reduction in cognitive capacity. For example, they note that automatic thoughts are produced without "interference," given their usurption of working memory. Reduced capacity by automatic processing would then

result in less cognitive flexibility and, by implication, less behavioural flexibility given that fewer "cognitive slots" are available for simultaneous consideration. This process can readily explain the tendency towards categorical or "black-and-white" thinking common in depression (Hammen, 1992) as well as the similar phenomenon noted by parenting theorists in "good-bad" categorizations of child behaviour (e.g., Dix, 1990; Wahler & Dumas, 1989). Applied to the present study, constrictions in maternal perceptual processes, such that negative perceptions are gravitated to, and constrictions in parenting responses, such that aversive parenting dominates, may flow directly from depression-related cognitive deficits of narrowed attention and/or reduced cognitive capacity. It is noted that narrowed attention is postulated in theories of dysfunctional parenting (e.g., Milner, 1993; Wahler & Dumas, 1989).

Hartlage et al. (1993) make the distinction between current depressed mood and individuals who are likely to recurrently experience depression (including distal depression), labelled "depression-prone" subjects. Depression-prone persons are described as having had more practice at processing negative information, perhaps as a result of frequent and/or intense experiences with pain or loss. As a consequence, negative content is more likely to be processed automatically with minimal attentional requirements.

In reviewing the empirical data, Hartlage et al. (1993) qualify their postulation of the impairment of effortful processing in depression as applying only to depression-proneness rather than depressed mood. They found support for depression-proneness being linked to a negative perceptual and attributional bias, with limited evidence for maladaptive interpretations of positive events. Further, clinical levels of depression are not a pre-requisite; mild depression can exert these cognitive effects, especially for high cognitive demand tasks (of which as parenting would be one). These authors conclude that automatic negative thoughts may be more closely related to historical presence of depression than to current depression, with a greater range of cognitive processes in those with current depressive mood states:

Non-depression-prone people who are temporarily in a bad mood may switch from automatic to effortful processing and short-circuit negative thoughts by counting their blessings, looking for the silver lining and so on. Depression-prone individuals who are temporarily in a bad mood and whose remaining attentional resources are decreased (by narrowing of focus or by decreased cognitive capacity) may also be unable to 'get an ego boost' by taking credit for any good things that do happen to them (Hartlage et al., 1993, p.271).

The increased negative information processing of depression-prone persons creates a vicious cycle as it results in increased practice and automation of such processing, placing such persons at further risk for future depression.

Applying Hartlage et al.'s (1993) arguments to the

present study, cognitive mediation of proximal depression would not be expected to be as clearly seen, given that such processes seem to apply to trait-like depression, rather than temporary sad mood. Proximal depression may reflect both depression-prone and non-depression-prone groups. In contrast, distal depression is consistent with the notion that trait-like depressives would be expected to show historical depressive symptoms. Depression-prone mothers would be expected to evidence distal depression and only these mothers would be at increased risk for cognitive biases, given their reduced ability to counteract their negative thoughts through conscious efforts. Since distal depression cannot be taken to reflect depression-proneness (although it is consistent with it), such an interpretation would be bolstered by identifying those mothers at-risk for depression, examining their cognitive processes over time.

A more specific test of these interpretations would be to identify four groups of parents: those who historically report experiencing depression periodically over time and who are currently depressed, those who historically report experiencing depression and who are not currently depressed, those who have not reported previous depression and who are currently depressed, and those who report experiencing no or very low depression over time. By measuring depression over time, parents could be categorized into these four groups and compared on measures of cognitive mediation and parent-

child interactions. Given Hartlage et al.'s (1993) findings, it would be predicted that both distal and proximal depression would show cognitive mediation, but only for depression-prone individuals (likely the first two groups showing a history of depression).

The present finding of cognitive mediation of distal depression identifies maternal perceptions as potent intervention targets. Such appraisals may be considered dysfunctional in that they promote a negative style of parenting, and aversive parenting has been showed to play a role in child maladjustment (Kendziora & O'Leary, 1993). Hartlage et al. (1993) recommend general strategies to address depression-related negative information-processing biases. The typical depression interventions of thought-stopping procedures for negative thoughts, practice for positive thoughts, stress management, and relaxation are offered. Considering parenting, programs which seek to teach parenting skills do emphasize similar strategies, such as providing balanced attention, positive reinforcement of child behaviour, and planned ignoring of child misconduct (e.g., Cunningham et al., 1992). However, few parent training programs explicitly address stress management and relaxation strategies.

Hartlage et al. (1993) also offer interventions more specific to cognitive mediation, such as direct instruction in increasing attention to discriminative stimuli and direct

training in switching from automatic processing of content that is negative to more adaptive effortful processing. Applying their intervention suggestions to parenting, it would seem fruitful to have mothers attend to their moment-by-moment interpretations of child behaviour, to examine when and how these are linked to aversiveness, and to identify alternative strategies (use of more proactive strategies, identifying alternative interpretations of child behaviour etc.). In other words, one intervention goal would be to help depressed mothers to more effortfully process information.

Waher and Dumas (1989) identify some of these elements in their recommendation for "synthesis training" where a community member views videotaped interactions of the mother and her child and discusses with the mother what child events had transpired, with what parental reactions. In essence they are recommending a functional analysis of parental behaviour, where the parent is helped to examine the functions that are served by negative perceptions of child behaviour. For example, negative child perceptions and attributions may factor into maintaining depressive symptomatology. A more "forgiving" view of child behaviour may open the possibility of more positive mother-child interactions and may decrease a depressed mother's sense of hopelessness and helplessness.

Conclusion 3. Direct effects: No cognitive mediation of proximal maternal depression in predicting aversive parenting.

This final result is discussed in two parts: the direct contribution of proximal depression and proximal perceptions to the prediction of aversive parenting.

The direct effect of contemporaneous maternal depression.

The present study extends our knowledge of the association of maternal depression and aversive parenting by identifying: a) that proximal depression exerts a direct effect on aversive parenting and b) that proximal depression remains a significant contributor, even when socioeconomic status and maternal proximal perceptions of child problem behaviour are considered. As noted previously, the link between increased maternal depression and increased aversiveness towards the child is well-supported in the literature. However, this relation has been established without distinguishing distal from proximal depression. For example, Panaccione and Wahler (1986) administered the Beck Depression Inventory at the close of each of their four observations, basing results on the average across administrations. Thus, the failure to tease out proximal from distal depression prohibited an analysis of potentially different process mechanisms, which the current study results show as a fruitful approach.

The process by which contemporaneous depression

increases aversive parenting remains at issue. Certainly the present results suggest that the process is not cognitive mediation by contemporaneous child ratings. A possible explanation may be a depression-related lowered threshold of tolerance for child misconduct (Richters, 1992). That is, while the currently depressed mother may not rate their child's problem behaviour as high frequency or high intensity, they may be intolerant of low frequency and mild problem behaviour. It is noted that the intake measure of problem behaviour in this study did examine ratings of problem frequency as well as ratings of behaviour as management problems, with no differences in results emerging.

Another potential process could be a spread of activation, where proximal depression is connected in memory to related events, experiences, concepts, and affects (e.g., Bower, 1981; 1987). In this way, proximal depression may facilitate the retrieval of aversive strategies (Dix, 1990). This interpretation is supported by the conclusions of Matt et al. (1992) that mildly depressed persons recall positive and negative stimuli equally, whereas nondepressed persons recall positive stimuli better than negative stimuli. Given that the majority of the present study's mothers scored in the mild ranges of depression, it would follow that they could conduct memory searches for both aversive and positive parenting strategies, relating to both present results of a

link between depression and aversive parenting and a lack of a link between depression and positive affect. Further, as nondepressed mothers would tend to access positive parental strategies much more readily than aversive ones, the positive association between depression and aversive parenting would also be supported (i.e., low depression, low aversive parenting). Finally, the asymmetric recall of clinically depressed subjects favouring negative stimuli noted by Matt et al. (1992) would suggest that those few mothers who achieved clinical cut-off levels and beyond would be expected to more readily access aversive parental strategies than positive ones, thereby strengthening the depression-aversive parenting association (i.e. high depression, high aversive parenting). Thus, proximal depression could increase the likelihood of parental aversiveness via these events being encoded in a structurally related manner as would be seen in biased memory search and retrieval or via a lowered threshold of tolerance for child misbehaviour, for example.

The direct effect of child ratings.

The present study extends the known association between maternal perceptions of problem child behaviour and aversive parenting to identify that proximal perceptions exert a direct influence. As ratings were significant when depression and socioeconomic status were considered, one might speculate that maternal ratings of child problem

behaviour moves closer to "actual" child behaviour. As noted previously, the appropriateness of the aversive parenting remains unknown. Certainly, the importance of parents providing consequences for child misconduct, including such parental behaviours as expressed negative affect, disapproval, and punishment is considered a part of parental competence (Kendziora & O'Leary, 1993). Research shows that providing parental approval to to child misconduct is common in ineffective parenting (Patterson, 1982). The present finding may reflect the normative process in parental discipline, where perceptions of child misconduct are matched most often with parental aversive behaviour, frequently some form of power assertion techniques (Grusec & Kuczynski, 1980).

Section 2 - Limitations of the Study.

The construct of maternal depression.

An issue in the current study is the use of the term depression. It has been used in the literature to denote both clinical depression (categorical variable) and depressive symptomatology (continuous variable). If one further considers time as a dimension of depression, maternal depression could then reflect depressed mood, clinical depression, traitlike depressive characteristics, or other nondepression indices of maternal adjustment which are correlated with maternal depression (e.g., "distress"). In this study, none of the mothers were being treated for

depression and no clinical diagnosis of depression was made. The approach adopted was a continuous one of degree of depressive symptomatology.

This is not to rule out the possibility that a few mothers may have been clinically depressed. Of the 95 mothers, there were 4 who had CES-D scores exceeding the clinical cut-off at all 5 CES-D assessments. Further, 10-20% of the sample had scores reflecting clinical levels of depression from intake through week 4. Considering the other extreme, only 2 mothers had 0 CES-D scores across all assessments. Thus, it would seem that in the present study most mothers identified some degree of depressive symptomatology, suggesting that the experience of some depressive symptoms may be "normal" for mothers. Given this normative context, it would seem that a continuous approach to depression is appropriate to the study of how depression in community mothers is linked to parenting. A limitation in the present study, though, is that findings may not apply to the diagnosed clinically depressed mother. A corollary issue is whether differences exist between subclinically and clinically depressed mothers who do not present at clinic for help with depressed mood and those mothers who do present either for their own depression or for child behaviour problems.

In trying to delineate the substantive differences between adopting a categorical versus continuous approach to

maternal depression, it is not clear that the distinction is necessarily one of severity or of a particular constellation of symptoms, although it may be one of chronicity. That is, a defining point of clinical depression is its persistence over time; the DSM-III-R (American Psychiatric Association, 1987) identifies a period of two weeks for a diagnosis of "Major Depression" in which a specific constellation of symptoms must be present, "nearly every day." However, evidence shows variation in daily mood in clinically depressed persons as a function of concurrent events (e.g., Lewinsohn, 1974). Indeed, the construct of "clinical" depression is noted for its many definitional difficulties (Rehm, 1988).

The construct of maternal perceptions.

Another issue in the current study is the use of the term perception as applied to maternal ratings of child problem behaviour. The literature has considered maternal reports of child behaviour both as indices of maternal perceptions and actual child behaviour. However, Richters (1992) aptly identifies the latter as an "assumption of convenience" which has been challenged by numerous studies questioning the accuracy of depressed mothers' reports about their children's behaviour, given both the consistent correlation between maternal depression and ratings of the child and the lack of strong correlation between maternal reports and reports from other sources (e.g, teacher).

Instead, the popular assumption of "accuracy" has been replaced by an equally popular assumption of "inaccuracy" or cognitive distortion by depressed mothers, as seen in an over-reporting of children's behaviour problems.

With respect to the present study, it is important to note that the objective nature of maternal child ratings was not a research question. Hence, a caveat is that findings related to maternal perceptions do not identify the "accuracy" of such ratings, as determined for example by observed child behaviour. This is not to suggest that child effects are not existent or important. A well-reported postulation is that children's conduct elicits parental responses (e.g., Lytton, 1990). However, as McCord (1993) points out, experimental studies on child effects show short-term effects and efforts to replicate such findings with longitudinal studies have not been successful.

If one assumed that particular child conduct "provokes" particular parental response in a manner describing most parents, the question remains as to whether it is a specific parental behaviour that is elicited or whether it is a specific parental affect that is elicited to which parents select a specific response, with a subset of parents responding in similar fashion. McCord (1993) argues that behaviour is about making choices. For example, Christensen et al. (1983) report that, for both mothers and fathers, perception of child behaviour problems accounted for 25% of

the variance in observed parental aversiveness, but only 4-6% of the variance in child aversiveness. Thus, the parents' greater power to intervene may make their behavioural intention more likely to come to fruition (Hoffman, 1975), which in some circumstances may have less to do with child characteristics (Mash & Johnston, 1990).

The accuracy of maternal ratings issue is an important one, requiring specific evaluative criteria to rule out several competing interpretations. Richters (1992) identifies that the maternal depression-maternal ratings of child problem behaviour association is consistent with three models: (1) a distortion model which identifies that maternal reports reflect maternal mental state more than actual child behaviour, (2) an accuracy model which identifies that maternal depression leads to increased reporting accuracy as depressed mothers see their children more realistically, and (3) a common-method model which assumes that some other common, third factor is related to both depression and ratings such as marital distress, chronic family problems, and personality characteristics. Although research shows maternal depression predicts reporting disagreements (between teachers, mothers, and the child) (Fergusson, Lynskey, & Horwood, 1993), none of the possible interpretations have been confirmed to date. As noted, the importance of cognitive mediation as a process mechanism is not diminished by a lack of knowledge about the

accuracy of maternal perceptions.

Sampling issues.

The results of this study apply to community samples and not necessarily to clinical samples of child behaviour problems and parenting problems. A direct comparison of community samples exhibiting these variables to clinic families referred on the basis of these variables would be needed to address the similarity in process among high-risk, at-risk, and low to no-risk groups. Further, the present community sample displayed a range of background variables; for example, socioeconomic status and marital status are two variables which differed substantially for a subset of study participants. Consequently, the present results may differ from community samples randomly selected.

Finally, these results are based on a restricted, early school age sample of caucasian-only children. Sampling across a greater range of these variables would add to the generalizability of the current study results.

Section 3 - Summary of Findings and Directions for Future Research.

The present study depicts a dual pathway of influence of maternal depression - the direct effect of proximal depression on aversive parenting and the indirect effect of distal depression on aversive parenting, through maternal perception of child problem behaviour. To account for the direct effect, a spread of activation mechanism was

suggested whereby negative affects and behaviours would be structurally related in memory. To account for the indirect effect, the preponderance of automatic processing of mood-congruent (negative) information to the detriment of effortful processing was suggested. Thus, with the proximal depression, the affect is "driving" parental behaviour whereas with distal depression, the cognitions are. While this implies a causal direction, it is noted that reverse causation is possible - aversive parenting leading to both maternal depression and perceptions of child problem behaviour. It has been argued that nonoptimal parental behaviour may be functional in maintaining depression through engendering a feeling a depleted sense of worth and interpersonal competence (Hammen, 1992). Further, it is noted that the correlational nature of this study precludes causal inferences, which are better established via experimental manipulation (e.g., intervention studies) and longitudinal research.

Given the present findings, future considerations are raised for further study of maternal depression, contextual stress, cognitive mediation, and parent-child interactions, each of which will be discussed separately.

Future research in maternal depression.

The issue of chronicity emerges as one important future consideration in research on maternal depression. That is, does depression reveal a dual-pathway of influence when

considering "chronic" depressives from "previous-only" and from "current-only" depressives? Alpern and Lyons-Ruth (1993) found differences in child outcome as a function of the timing and chronicity of maternal depressive symptomatology. Mothers who reported high depressive symptom levels both during the child's infancy and at the preschool level, had children who were rated by both teachers and mothers as having more hostile/aggressive behaviour problems. Children of previously, but not currently, depressed mothers were more likely to be rated as anxious and withdrawn at home and at school. Children of current-only depressed mothers were more likely to be rated as hyperactive and demanding. Unfortunately, these child outcomes were not explored in terms of differences in parental behaviour. None the less, given such vast differences in child adjustment as a function of chronicity of maternal depression, suggests the need for future research to measure depression and parenting over time.

Also, it may prove useful to incorporate a fuller assessment of related parental factors, including personality. Some of the variability in depressed caregivers may reflect broadly based personality styles and differences (Radke-Yarrow & Zahn-Waxler, 1990). For example, Mills et al. (1985) identified two groups of depressed mothers: those with personality difficulties and depression who displayed a range of caretaking difficulties

and those who were depressed, but not suffering from personality disorders, who interacted sensitively and were involved with their child.

Two main interactional patterns identified by maternal depression researchers are withdrawn and aversive (Field, 1992), which seems to match the sadness-anger affective pattern noted in depression (e.g., Izard, 1991). These withdrawn and aversive personality styles seem to translate to interactional differences. For example, Cohn et al. (1986) identified among their depressed sample withdrawn mothers who spent the majority of their time disengaged from their infants and who were responsive only to infant distress, and intrusive mothers who spent close to half their time rough handling, expressing anger and irritation to their infant. This suggests that distinct parenting typologies may exist among depressed samples, as a function of maternal personality differences and/or types of depression. Thus, it might be fruitful for future research to consider patterns of parental behaviour in the context of patterns in depressive phenomenon.

Finally, future research should consider child variables as a function of both maternal depression and parenting. One important area would be child attachment status. For example, DeMulder and Radke-Yarrow (1991) found that attachment and not maternal depression was the more significant predictor of observed maternal affect. Mothers

of secure children tended to express more joy, more tenderness/affection, and more neutral/pleasant affect than mothers of insecure children. Given that the formation of an insecure attachment relationship with a caregiver in early childhood is identified as a risk factor for later maladaptive outcomes (e.g., Cicchetti & Greenberg, 1991), the study of how maternal depression, maternal behaviour, and child attachment are connected would seem an important area of study.

Future research in contextual stress.

Future research on contextual stress would need to examine more closely the co-occurrence of stress-related variables. Maternal depression is known to co-occur with other contextual stress variables, including SED, marital distress, and deficient social support systems, while little is known about the directionality of influence among these variables and maternal depression (Richters, 1992). Thus, future research might consider comparing expanded models of contextual stress in an effort to identify salient relations among these, maternal depression, and aversive parenting.

Future research in cognitive mediation.

Future research should replicate the current findings and extend them to other cognitive processes, such as attributions. The next step may include linking these to higher-order cognitive mediators. Adult attachment models would seem an important area of research since,

theoretically, maternal depression is thought to act as an "affective hook" for activating a mother's own problematic attachment models (MacKinnon et al., 1990). For example, Pearson, Cohn, Cowan and Cowan (1994) showed that adults who seemed to have successfully transformed their early negative childhood experiences to achieve a current rating of secure state-of-mind regarding attachment (labelled "earned" secure), were none the less undifferentiated from their insecure counterparts in terms of level of self-reported depressive symptomatology. These authors suggest that past relational difficulties may remain a source of depression, or an emotional liability. Importantly, however, these earned-secure parents were distinct from their insecure counterparts in terms of parental behaviour. The earned-secure group displayed significantly greater "warmth" (responsiveness, low displeasure, low anger, low coldness) and greater "structure" (limit setting, maturity demands, structures task, clear communication) than insecure parents in a 40 minute play task. These results highlight the importance and success of positive cognitive reconstruction of early attachment relationships to parental behaviour. It would have been interesting had these authors assessed the parent's perceptions of the child to examine the relation between adult attachment models, parental perceptions, depression, and parenting. One study, Crowell et al. (1991), found that mothers with insecure attachment models

rated their children higher on externalizing behaviour as compared to mothers with secure models, suggesting a link between parental perceptions of child problem behaviour and parental insecure models.

Studies examining the link between parental state-of-mind regarding attachment and perceptions of child problem behaviour are important for future research as they are in a position to identify an important theoretical advance. Also clinically, it would identify both working models and perceptions as viable targets for parenting intervention.

Future research in parent-child interactions.

The present study focused on base rates of maternal behaviours. However, this serves to limit the investigation into process mechanisms than would the use of conditional probabilities and extended chains of maternal and child behaviours. For example, if one considers that the negative child ratings-aversive parenting link reflects maternal aversiveness in response to child aversiveness, a variety of dyadic interactional patterns may be implicated. Extended behavioural chains may be used to identify patterns of interaction. For example, disengaged parenting may be reflected by an extended chain of child nonaversive-mother no response-child aversive-mother aversive. Aversive parenting may be reflected by extended coercive interchanges. Innovatively, Snyder (1991) defined aversive parenting interactionally, as indicated by both the mother's

reciprocating child aversiveness with aversiveness and the mother's negative reinforcement of child aversiveness by her ceasing to respond aversively, given child aversiveness. He found maternal aversive interactions to be a mediator of maternal "distress" (indicated by both depression and contextual stress) and child conduct problems. On days in which mothers reported increased distress, there was a higher incidence of aversive parenting which, in turn, related to same-day increases in child conduct problems. Extending these findings, Synder et al. (1993) showed that mothers of conduct-disordered clinic children were less likely to "opt out" of increasing aversive interchanges with their child than were non-clinic mothers. These findings highlight the usefulness of conditional probabilities in identifying points of intervention. That is, mothers could get "unstuck" from coercive traps if they are encouraged to track the number of successive aversive responses and be in a position to implement a different response, for example, employ a house rule where a time-out would follow the third exchange with the child. Thus, future research may gain greater specificity in results by measuring the patterning of parent and child behaviours, as well as those involving other significant interactants (e.g., partners, siblings).

Finally, greater attention to the coding of affect, in particular considering positive affect as potentially distinct from negative affect and parenting strategies,

emerges as an issue for future consideration. Given the speculation about the "meaning" to attach to the affect displayed by depressed mothers, it would seem fruitful to expand the coding of affect to better reflect its complexity. For example, consideration may be given to coding the setting in which affect to the child is displayed (e.g., maternal anxiety) as well as factors as the congruence between maternal affect and behaviour, the number of affective "shifts" within interactional episodes etc.

In conclusion, no single study can include all of these relevant variables, across all relevant interactants, measured over time. As noted in the discussion, there remains a need to investigate factors associated with maternal positive affect. However, present and current research does identify the need to account for the process by which maternal depression leads to aversive parenting, when (and why) such parenting has negative effects on the child, and when (and why) it does not. As Rutter (1988) commented "the long-term effects of relationships upon relationships is seen most strikingly in the sequelae of institutional rearing....The findings indicate a tantalizing mixture of relationship effects that persist over time in spite of a radical change in environment, combined with a continuing responsivity to environmental effects. Any hypothesis on the processes involved must take account of both continuities and discontinuities" (p.349). McCord

(1993) extends the research "call to arms" to include a "focus on the ways in which external experiences interact with motives and reasoning in order to make sense of why people choose to act as they do" (p.325). These sentiments forcefully propel future research in aversive parenting to examine the interface between internal experiences of external events and the subsequent external responses, as they occur in day-to-day living and over time.

APPENDICES

APPENDIX A

DSM-III-R Criteria for a Diagnosis of Major Depression

The current study does not address "clinical" depression, that is, depression at such levels to warrant a psychiatric diagnosis. However, the criteria for a diagnosis of depression are presented as a means for comparison to the current study's measures of depression.

The American Psychiatric Association's manual, the DSM-III-R (APA, 1987), identifies the criteria necessary for assigning a clinical diagnosis of depression. These are: at least 5 of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.

DSM-III-R Symptom List:

- (1) depressed mood most of the day, nearly every day, as indicated either by subjective account or observation by others,
- (2) markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated either by subjective account or observation by others of apathy most of the time),
- (3) significant weight loss or weight gain when not dieting (e.g., more than 5% of body weight in a month), or decrease or increase in appetite nearly every day,
- (4) insomnia or hypersomnia nearly every day,

- (5) psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down),
- (6) fatigue or loss of energy nearly every day,
- (7) feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick),
- (8) diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others),
- (9) recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without specific plan or a suicide attempt or a specific plan for committing suicide.

Further, other disorders must be ruled out, i.e. organic factors, normal reaction to the death of a loved one, and no psychotic symptoms (hallucinations, delusions) for up to 2 weeks in the absence of mood symptoms.

Appendix B

Copies of Study Measures:

Eyberg Child Behavior Inventory

Beck Depression Inventory

Centre for Epidemiological Studies'

Depression Scale

The Parenting Stress Index

The Parent Daily Report

The Community Interaction Checklist

The INTERACT code definitions

Rater's Name _____ Child's Name _____
 Relationship to Child _____ Child's Age _____
 Date of Rating _____ Birthdate _____

EYBERG CHILD BEHAVIOR INVENTORY

Directions: Below are a series of phrases that describe children's behavior. Please (1) circle the number describing how often the behavior currently occurs with your child, and (2) circle either "yes" or "no" to indicate whether the behavior is currently a problem.

	How often does this occur with your child?							Is this a problem for you?	
	Never	Seldom	Sometimes	Often	Always			Yes	No
1. Dawdles in getting dressed	1	2	3	4	5	6	7	Yes	No
2. Dawdles or lingers at mealtime	1	2	3	4	5	6	7	Yes	No
3. Has poor table manners	1	2	3	4	5	6	7	Yes	No
4. Refuses to eat food presented	1	2	3	4	5	6	7	Yes	No
5. Refuses to do chores when asked	1	2	3	4	5	6	7	Yes	No
6. Slow in getting ready for bed	1	2	3	4	5	6	7	Yes	No
7. Refuses to go to bed on time	1	2	3	4	5	6	7	Yes	No
8. Does not obey house rules on his own	1	2	3	4	5	6	7	Yes	No
9. Refuses to obey until threatened with punishment	1	2	3	4	5	6	7	Yes	No
10. Acts defiant when told to do something	1	2	3	4	5	6	7	Yes	No
11. Argues with parents about rules	1	2	3	4	5	6	7	Yes	No
12. Gets angry when doesn't get his own way	1	2	3	4	5	6	7	Yes	No
13. Has temper tantrums	1	2	3	4	5	6	7	Yes	No
14. Sasses adults	1	2	3	4	5	6	7	Yes	No
15. Whines	1	2	3	4	5	6	7	Yes	No
16. Cries easily	1	2	3	4	5	6	7	Yes	No
17. Yells or screams	1	2	3	4	5	6	7	Yes	No
18. Hits parents	1	2	3	4	5	6	7	Yes	No
19. Destroys toys and other objects	1	2	3	4	5	6	7	Yes	No
20. Is careless with toys and other objects	1	2	3	4	5	6	7	Yes	No
21. Steals	1	2	3	4	5	6	7	Yes	No
22. Lies	1	2	3	4	5	6	7	Yes	No
23. Teases or provokes other children	1	2	3	4	5	6	7	Yes	No
24. Verbally fights with friends his own age	1	2	3	4	5	6	7	Yes	No
25. Verbally fights with sisters and brothers	1	2	3	4	5	6	7	Yes	No
26. Physically fights with friends his own age	1	2	3	4	5	6	7	Yes	No
27. Physically fights with sisters and brothers	1	2	3	4	5	6	7	Yes	No
28. Constantly seeks attention	1	2	3	4	5	6	7	Yes	No

	How often does this occur with your child?							Is this a problem for you?	
	Never	Seldom	Sometimes	Often	Always			Yes	No
28. Interrupts	1	2	3	4	5	6	7	Yes	No
29. Is easily distracted	1	2	3	4	5	6	7	Yes	No
30. Has short attention span	1	2	3	4	5	6	7	Yes	No
31. Fails to finish tasks or projects	1	2	3	4	5	6	7	Yes	No
32. Has difficulty entertaining himself alone	1	2	3	4	5	6	7	Yes	No
33. Has difficulty concentrating on one thing	1	2	3	4	5	6	7	Yes	No
34. Is overactive or restless	1	2	3	4	5	6	7	Yes	No
35. Wags the tail	1	2	3	4	5	6	7	Yes	No

BECK INVENTORY

181.

NAME: _____

DATE: _____

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling the PAST WEEK, INCLUDING TODAY. Place a check mark beside the statement you picked. If several statements in the group seem to apply equally well, check each one. Be sure to read all the statements in each group before making your choice.

1. I do not feel sad.
I feel sad.
I am sad all the time and I can't snap out of it.
I am so sad or unhappy that I can't stand it.
2. I am not particularly discouraged about the future.
I feel discouraged about the future.
I feel I have nothing to look forward to.
I feel that the future is hopeless and that things cannot improve.
3. I do not feel like a failure.
I feel I have failed more than the average person.
As I look back on my life, all I can see is a lot of failure.
I feel I am a complete failure as a person.
4. I get as much satisfaction out of things as I used to.
I don't enjoy things the way I used to.
I don't get real satisfaction out of anything anymore.
I am dissatisfied or bored with everything.
5. I don't feel particularly guilty.
I feel guilty a good part of the time.
I feel quite guilty most of the time.
I feel guilty all of the time.
6. I don't feel I am being punished.
I feel I may be punished.
I expect to be punished.
I feel I am being punished.
7. I don't feel disappointed in myself.
I am disappointed in myself.
I am disgusted with myself.
I hate myself.

Beck Inventory (Continued)

-2-

8. I don't feel I am any worse than anybody else.
I am critical of myself for my weaknesses or mistakes.
I blame myself all the time for my faults.
I blame myself for everything bad that happens.
9. I don't have any thoughts of killing myself.
I have thoughts of killing myself, but I would not carry them out.
I would like to kill myself.
I would kill myself if I had the chance.
10. I don't cry anymore than usual.
I cry more now than I used to.
I cry all the time now.
I used to be able to cry, but now I can't cry even though I want to.
11. I am no more irritated now than I ever am.
I get annoyed or irritated more easily than I used to.
I feel irritated all the time now.
I don't get irritated at all by the things that used to irritate me.
12. I have not lost interest in other people.
I am less interested in other people than I used to be.
I have lost most of my interest in other people.
I have lost all my interest in other people.
13. I make decisions about as well as I ever could.
I put off making decisions more than I used to.
I have greater difficulty in making decisions than before.
I can't make decisions at all anymore.
14. I don't feel I look any worse than I used to.
I am worried that I am looking old or unattractive.
I feel that there are permanent changes in my appearance that make me look unattractive.
I believe that I look ugly.
15. I can work about as well as before.
It takes an extra effort to get started at doing something.
I have to push myself very hard to do anything.
I am too tired to do anything.

16. I can sleep as well as usual.
I don't sleep as well as I used to.
I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
I wake up several hours earlier than I used to and cannot get back to sleep.
17. I don't get more tired than usual.
I get tired more easily than I used to.
I get tired from doing almost anything.
I am too tired to do anything.
18. My appetite is no worse than usual.
My appetite is not as good as it used to be.
My appetite is much worse now.
I have no appetite at all anymore.
19. I haven't lost much weight, if any, lately.
I have lost more than 5 pounds.
I have lost more than 10 pounds. I am purposely trying to lose weight
I have lost more than 15 pounds. by eating less. YES ___ NO ___
20. I am no more worried about my health than usual.
I am worried about physical problems such as aches and pains; or upset
stomach; or constipation.
I am very worried about physical problems and it's hard to think of much else.
I am so worried about my physical problems, that I cannot think about anything
else.
21. I have not noticed any recent change in my interest in sex.
I am less interested in sex than I used to be.
I am much less interested in sex now.
I have lost interest in sex completely.

CES-D SCALE

CASE FILE NO: _____

184.

DATE: _____

Below is a list of the ways you might have felt or behaved. Please circle the number for each statement that best describes how often you felt this way DURING THE PAST WEEK.

DURING THE PAST WEEK:	Rarely or none of the time (- 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
1. I was bothered by things that usually don't bother me	1	2	3	4
2. I did not feel like eating; my appetite was poor	1	2	3	4
3. I felt that I could not shake off the blues even with help from my family or friends	1	2	3	4
4. I felt that I was just as good as other people	1	2	3	4
5. I had trouble keeping my mind on what I was doing	1	2	3	4
6. I felt depressed	1	2	3	4
7. I felt that everything I did was an effort	1	2	3	4
8. I felt hopeful about the future	1	2	3	4
9. I thought my life had been a failure	1	2	3	4
10. I felt fearful	1	2	3	4
11. My sleep was restless	1	2	3	4
12. I was happy	1	2	3	4
13. I talked less than usual	1	2	3	4
14. I felt lonely	1	2	3	4
15. People were unfriendly	1	2	3	4
16. I enjoyed life	1	2	3	4
17. I had crying spells	1	2	3	4
18. I felt sad	1	2	3	4
19. I felt that people disliked me	1	2	3	4
20. I could not "get going"	1	2	3	4

PARENTING STRESS INDEX (PSI)

Administration Booklet

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Directions:

In answering the following questions, please think about the child you are most concerned about.

The questions on the following pages ask you to mark an answer which best describes your feelings. While you may not find an answer which exactly states your feelings, please mark the answer which comes closest to describing how you feel. **YOUR FIRST REACTION TO EACH QUESTION SHOULD BE YOUR ANSWER.**

Please mark the degree to which you agree or disagree with the following statements by filling in the number which best matches how you feel. If you are not sure, please fill in #3.

1	2	3	4	5
Strongly	Agree	Not	Disagree	Strongly
Agree		Sure		Disagree

Example: 1 (2) 3 4 5 I enjoy going to the movies. (If you sometimes enjoy going to the movies, you would fill in #2.)

1. When my child wants something, my child usually keeps trying to get it.
2. My child is so active that it exhausts me.
3. My child appears disorganized and is easily distracted.
4. Compared to most, my child has more difficulty concentrating and paying attention.
5. My child will often stay occupied with a toy for more than 10 minutes.
6. My child wanders away much more than I expected.
7. My child is much more active than I expected.
8. My child squirms and kicks a great deal when being dressed or bathed.
9. My child can be easily distracted from wanting something.
10. My child rarely does things for me that make me feel good.
11. Most times I feel that my child likes me and wants to be close to me.
12. Sometimes I feel my child doesn't like me and doesn't want to be close to me.
13. My child smiles at me much less than I expected.
14. When I do things for my child I get the feeling that my efforts are not appreciated very much.
15. Which statement best describes your child?
 1. almost always likes to play with me.
 2. sometimes likes to play with me.
 3. usually doesn't like to play with me.
 4. almost never likes to play with me.
16. My child cries and fusses:
 1. much less than I had expected.
 2. less than I expected.
 3. about as much as I expected.
 4. much more than I expected.
 5. it seems almost constant.
17. My child seems to cry or fuss more often than most children.
18. When playing, my child doesn't often giggle or laugh.
19. My child generally wakes up in a bad mood.
20. I feel that my child is very moody and easily upset.
21. My child looks a little different than I expected and it bothers me at times.
22. In some areas my child seems to have forgotten past learnings and has gone back to doing things characteristic of younger children.

23. My child doesn't seem to learn as quickly as most children.
24. My child doesn't seem to smile as much as most children.
25. My child does a few things which bother me a great deal.
26. My child is not able to do as much as I expected.
27. My child does not like to be cuddled or touched very much.
28. When my child came home from the hospital, I had doubtful feelings about my ability to handle being a parent.
29. Being a parent is harder than I thought it would be.
30. I feel capable and on top of things when I am caring for my child.
31. Compared to the average child, my child has a great deal of difficulty in getting used to changes in schedules or changes around the house.
32. My child reacts very strongly when something happens that my child doesn't like.
33. Leaving my child with a babysitter is usually a problem.
34. My child gets upset easily over the smallest thing.
35. My child easily notices and overreacts to loud sounds and bright lights.
36. My child's sleeping or eating schedule was much harder to establish than I expected.
37. My child usually avoids a new toy for a while before beginning to play with it.
38. It takes a long time and it is very hard for my child to get used to new things.
39. My child doesn't seem comfortable when meeting strangers.
40. When upset, my child is:
 1. easy to calm down.
 2. harder to calm down than I expected.
 3. very difficult to calm down.
 4. nothing I do helps to calm my child.
41. I have found that getting my child to do something or stop doing something is:
 1. much harder than I expected.
 2. somewhat harder than I expected.
 3. about as hard as I expected.
 4. somewhat easier than I expected.
 5. much easier than I expected.

42. Think carefully and count the number of things which your child does that bothers you. For example: dawdles, refuses to listen, overactive, cries, interrupts, fights, whines, etc. Please fill in the number which includes the number of things you counted.
1. 1-3
 2. 4-5
 3. 6-7
 4. 8-9
 5. 10+
43. When my child cries it usually lasts:
1. less than 2 minutes.
 2. 2-5 minutes.
 3. 5-10 minutes.
 4. 10-15 minutes.
 5. more than 15 minutes.
44. There are some things my child does that really bother me a lot.
45. My child has had more health problems than I expected.
46. As my child has grown older and become more independent, I find myself more worried that my child will get hurt or into trouble.
47. My child turned out to be more of a problem than I had expected.
48. My child seems to be much harder to care for than most.
49. My child is always hanging on me.
50. My child makes more demands on me than most children.
51. I can't make decisions without help.
52. I have had many more problems raising children than I expected.
53. I enjoy being a parent.
54. I feel that I am successful most of the time when I try to get my child to do or not do something.
55. Since I brought my last child home from the hospital, I find that I am not able to take care of this child as well as I thought I could. I need help.
56. I often have the feeling that I cannot handle things very well.
57. When I think about myself as a parent I believe:
1. I can handle anything that happens.
 2. I can handle most things pretty well.
 3. sometimes I have doubts, but find that I handle most things without any problems.
 4. I have some doubts about being able to handle things.
 5. I don't think I handle things very well at all.

58. I feel that I am:

1. a very good parent.
2. a better than average parent.
3. an average parent.
4. a person who has some trouble being a parent.
5. not very good at being a parent.

59. What were the highest levels in school or college you and the child's father/mother have completed?

Mother:

1. 1-8th grade
2. 9-12th grade
3. Vocational or some college
4. College graduate
5. Graduate or professional school

60. Father:

1. 1-8th grade
2. 9-12th grade
3. Vocational or some college
4. College graduate
5. Graduate or professional school

61. How easy is it for you to understand what your child wants or needs?

1. very easy.
2. easy.
3. somewhat difficult.
4. it is very hard.
5. I usually can't figure out what the problem is.

62. It takes a long time for parents to develop close, warm feelings for their children.

63. I expected to have closer and warmer feelings for my child than I do and this bothers me.

64. Sometimes my child does things that bother me just to be mean.

65. When I was young, I never felt comfortable holding or taking care of children.

66. My child knows I am his or her parent and wants me more than other people.

67. The number of children that I have now is too many.

68. Most of my life is spent doing things for my child.

69. I find myself giving up more of my life to meet my children's needs than I ever expected.

70. I feel trapped by my responsibilities as a parent.

71. I often feel that my child's needs control my life.

72. Since having this child I have been unable to do new and different things.

- 73. Since having a child I feel that I am almost never able to do things that I like to do.
- 74. It is hard to find a place in our home where I can go to be by myself.
- 75. When I think about the kind of parent I am, I often feel guilty or bad about myself.
- 76. I am unhappy with the last purchase of clothing I made for myself.
- 77. When my child misbehaves or fusses too much I feel responsible, as if I didn't do something right.
- 78. I feel everytime my child does something wrong it is really my fault.
- 79. I often feel guilty about the way I feel towards my child.
- 80. There are quite a few things that bother me about my life.
- 81. I felt sadder and more depressed than I expected after leaving the hospital with my baby.
- 82. I wind up feeling guilty when I get angry at my child and this bothers me.
- 83. After my child had been home from the hospital for about a month, I noticed that I was feeling more sad and depressed than I had expected.
- 84. Since having my child, my spouse (male/female friend) has not given me as much help and support as I expected.
- 85. Having a child has caused more problems than I expected in my relationship with my spouse (male/female friend).
- 86. Since having a child my spouse (or male/female friend) and I don't do as many things together.
- 87. Since having my child, my spouse (or male/female friend) and I don't spend as much time together as a family as I had expected.
- 88. Since having my last child, I have had less interest in sex.
- 89. Having a child seems to have increased the number of problems we have with in-laws and relatives.
- 90. Having children has been much more expensive than I had expected.
- 91. I feel alone and without friends.
- 92. When I go to a party I usually expect not to enjoy myself.
- 93. I am not as interested in people as I used to be.
- 94. I often have the feeling that other people my own age don't particularly like my company.
- 95. When I run into a problem taking care of my children I have a lot of people to whom I can talk to get help or advice.

Social Isolation items

96. Since having children I have a lot fewer chances to see my friends and to make new friends. 191.
97. During the past six months I have been sicker than usual or have had more aches and pains than I normally do.
98. Physically, I feel good most of the time.
99. Having a child has caused changes in the way I sleep.
100. I don't enjoy things as I used to.
101. Since I've had my child:
1. I have been sick a great deal.
 2. I haven't felt as good.
 4. I haven't noticed any change in my health.
 5. I have been healthier.

STOP HERE — unless asked to do items below

During the last 12 months, have any of the following events occurred in your immediate family? Please check on the answer sheet any that have happened.

102. Divorce
103. Marital reconciliation
104. Marriage
105. Separation
106. Pregnancy
107. Other relative moved into household
108. Income increased substantially (20% or more)
109. Went deeply into debt
110. Moved to new location
111. Promotion at work
112. Income decreased substantially
113. Alcohol or drug problem
114. Death of close family friend
115. Began new job
116. Entered new school
117. Trouble with superiors at work
118. Trouble with teachers at school
119. Legal problems
120. Death of immediate family member

PARENT TELEPHONE INTERVIEW

Case No. _____
Date _____
Time _____
Parent _____

Monitoring

The following questions concern you and _____ (child's name) over the last 24 hours. Please answer "yes" or "no" to each question.

During the past 24 hours...

- 1. Did you talk to _____ (child's name) about what (s)he had done during the day or what (s)he is going to do tomorrow? (eg. play activities, school)
Yes No
- 2. Did you sit down to dinner as a family last night with your son/daughter?
Yes No
- 3. Was _____ (child's name) out after dark last night without an adult along?
Yes No

Conditional

- 4. Did (s)he come home from school on time?
Yes No Don't know

ELIMINATE FOR CHILDREN WHO ARE NOT CURRENTLY IN SCHOOL.

- 5. In the last 24 hours, how much time in hours did _____ (child's name) spend at home on his/her own (without an adult present; unsupervised)?
_____ hours

Overt Antisocial

The following questions concern your child's behavior over the last 24 hours. First I will ask if _____ (child's name) behaved as described. Please answer "yes" or "no" to these questions. Then I will ask you to briefly describe what you did in the way of discipline, if anything. (That is, any attempt to correct the child's behavior. Eg. reason with child, spank, scold, time out, remove privileges)

INTERVIEWER INSTRUCTIONS: For each "yes" response to the following items, ask the following questions immediately after each response.

- A. Did you discipline _____ (child's name) for this behavior?
- B. (If yes) Briefly describe what you did in the way of discipline.
- C. (If yes) Was there anything else that you did to discipline your child?

AFTER each "yes" response and subsequent discipline questions, PREFACE each new behavior question with "In the last 24 hours, did _____ (child's name)..."

-2-

In the last 24 hours, did _____ (child's name)...

6. Talk back to or sass an adult?

Yes No A. Yes No
 B. _____
 C. _____

7. Did (s)he complain about things or whine?

Yes No A. Yes No
 B. _____
 C. _____

8. Did (s)he scream, yell or shout at anyone?

Yes No A. Yes No
 B. _____
 C. _____

9. Did (s)he act sad or down (depressed)?

Yes No A. Yes No
 B. _____
 C. _____

10. Did (s)he show a bad attitude or act uncooperatively (act negatively toward others)?

Yes No A. Yes No
 B. _____
 C. _____

11. In the last 24 hours, did _____ (child's name) sulk or pout?

Yes No A. Yes No
 B. _____
 C. _____

12. Did (s)he swear at anyone?

Yes No A. Yes No
 B. _____
 C. _____

13. Did (s)he cry?

Yes No A. Yes No
B.

C. _____

14. Did (s)he tease anyone?

Yes No A. Yes No
B.

C. _____

15. Did (s)he disobey you?

Yes No A. Yes No
B.

C. _____

16. In the last 24 hours, did _____ (child's name) hit brothers or sisters or anyone else?

Yes No A. Yes No
B.

C. _____

17. Did (s)he wet or soil his/her bed or clothing?

Yes No A. Yes No
B.

C. _____

18. Did (s)he run away?

Yes No A. Yes No
B.

C. _____

19. Did (s)he throw a temper tantrum?

Yes No A. Yes No
B.

C. _____

20. In the last 24 hours, was _____ (child's name) overly active?

Yes No A. Yes No
B.

C. _____

21. Did (s)he make too much noise?

Yes No A. Yes No
B. _____
C. _____

22. Did (s)he criticize others?

Yes No A. Yes No
B. _____
C. _____

23. Did (s)he throw things?

Yes No A. Yes No
B. _____
C. _____

Covert Antisocial

Now I am going to change the time frame, and ask you about _____ (child's name) over the LAST THREE DAYS. Please answer "yes" or "no" to each question. Again I will ask you to describe what you did about these behaviors in the way of discipline, if anything.

INTERVIEWER INSTRUCTIONS: For each "yes" response to the following items, ask the following questions immediately after that response.
A. Did you discipline _____ (child's name) for this behavior?
B. (If yes) Briefly describe what you did in the way of discipline.
C. (If yes) Was there anything else that you did to discipline your child?

24. Do you think _____ (child's name) has told a lie in the last 3 days?

Yes No A. Yes No
B. _____
C. _____

conditional

25. Did (s)he skip school in the last 3 days?

Yes No A. Yes No
B. _____
C. _____

ELIMINATE FOR CHILDREN WHO ARE NOT CURRENTLY IN SCHOOL.

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26. Did (s)he get into trouble outside of the home (ie. at school or in the neighborhood) in the last three days? (Eg. arguments, breaking something that belongs to a neighbor or friend, problems at school)

Yes No A. Yes No

B. _____
C. _____

27. During the last three days, did _____ (child's name) take anything from any family member without permission? (Eg. money, toys)

Yes No A. Yes No

B. _____
C. _____

28. During the last three days, did anybody accuse him/her of taking anything?

Yes No A. Yes No

B. _____
C. _____

29. In the last three days, did _____ (child's name) break or destroy anything on purpose?

Yes No A. Yes No

B. _____
C. _____

(DO NOT ASK IF CHILD IS UNDER 9 YEARS OF AGE)

30. Do you think that _____ (child's name) smoked any cigarettes or chewed tobacco in the last three days?

Yes No A. Yes No

B. _____
C. _____

31. Do you think that (s)he drank any beer, wine, or hard liquor in the last three days?

Yes No A. Yes No

B. _____
C. _____

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32. Do you think that _____ (child's name) has taken any drugs in the last three days?

Yes No A. Yes No

B. _____

C. _____

THIS IS THE LAST QUESTION TO BE ASKED IN THIS SECTION, REGARDLESS OF THE CHILD'S AGE.

33. Was there anything else that _____ (child's name) may have done in the last three days that you found disruptive or annoying?

Yes _____ No A. Yes No

B. _____

C. _____

Positive Reinforcement

The next questions concern things you may have said or done with your child over the last three days. Please answer yes or no to each question.

34. Did you praise or compliment _____ (child's name) for anything (s)he did well in the last three days? (Eg. give affection verbally or tell child that (s)he did something well)

Yes No

35. Did you hug or kiss _____ (child's name) because you were pleased with him/her in the last three days?

Yes No

36. Did you give _____ (child's name) something extra like a snack, money, toy, privilege, or other things because you were pleased with him/her OR with anything (s)he did well in the last three days?

Yes No

Now I will ask you about some good things _____ (child's name) may have done in the last three days. I will also ask how you reacted. (Eg. reward child, do or say nothing in particular, compliment or praise, criticize, etc.)

37. In the last three days, did _____ (child's name) do any school work at home?

Optional

a. Yes No

b. (If yes) How did you react?

**ELIMINATE FOR CHILDREN
NOT CURRENTLY IN SCHOOL.**

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38. In the last three days, did you spend time alone with your child reading, playing a game, or something like that, but not watching TV?

a. Yes No

b. (If yes) How did you react? _____

conditional 39. In the last three days, did _____ (child's name) bring home a good paper from school?

ELIMINATE FOR CHILDREN
NOT CURRENTLY IN SCHOOL.

a. Yes No

b. (If yes) How did you react? _____

40. Did (s)he help around the house? (Eg. Help with brothers/sisters, chores)

a. Yes No

b. (If yes) How did you react? _____

41. In the past three days, did _____ (child's name) play cooperatively with others?

a. Yes No

b. (If yes) How did you react? _____

42. Is there anything else that _____ (child's name) may have done that was helpful or pleasant in the last three days?

a. Yes _____ No

b. (If yes) How did you react? _____

Crises and Support

The following questions are about things you may have done or felt in the last three days.

43. Were you sad, down, or depressed in the last three days?

Yes No

44. Were you angry, irritable, or in a bad mood in the last three days?

Yes No

45. In the last three days, did you stay out of _____ (child's name) way on purpose so you wouldn't have to talk with him? (ie. avoid him/her)

Yes No

46. In the past three days, did you get help from a family member or friend about some problem or difficulty you're having?

a. Yes No

b. (If yes) Who did you talk to? _____

c. (If yes) Were they helpful in figuring out what to do?

Yes No

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47. In the last three days, have there been any hassles, conflicts, or crisis for you? (ie. anything you found stressful; eg. arguments, accidents,

a. Yes No

b. (If yes) What were they?

c. (If yes) What did you do to deal with it?

d. Was that helpful?

Yes No

e. Did you talk to a friend about it?

Yes No

f. Was that helpful?

Yes No

48. Did you do any FUN things in the last three days? (ie. something that YOU particularly enjoyed)

a. Yes No

b. (If yes) What were they?

c. (If yes) Who did you do it with?

49. On a scale from 1 (very bad) to 10 (very good), what was your overall mood in the last three days?

1 2 3 4 5 6 7 8 9 10

Part 2. DAILY EVENT SUMMARY

EVENTS	PERSON(S) INVOLVED	VALENCE FOR RESPONDENT -3 = very bad +3 = very good 0 = neutral	COMMENTS
Physical illness			
Nervous illness			
Visit to doctor, dentist, social worker, therapist			
Argument with adult			
Argument with child			
Problem at work/school			
Money problem			
Transportation problem			
Household problem (e.g., appliances, utilities)			
Damaged or lost property			
Other			

Interact—A Computer-Based Coding and Data Management System

Table 3. Summary Definitions of Aversive Behavior Codes

<i>Codes</i>	<i>Definitions</i>
66 COMPLAINS	<p><i>Actor 1 to Situation</i></p> <ul style="list-style-type: none"> (a) Cries, sobs, whines (noninteractional); (b) Complains about situation or external event; uses profanity (noninteractional); (c) Makes negative evaluation of self, behavior, performance, physical appearance; (d) Makes negative evaluation of Actor not present in observation area.
77 ANNOYS	<p><i>Actor 1 to Actor 2</i></p> <ul style="list-style-type: none"> (a) Attempts/makes Actor 2 angry through provocation, nagging, teasing, mucking. <p><i>Actor 1 to Situation</i></p> <ul style="list-style-type: none"> (b) Shouts, screams, yells (noninteractional); (c) Engages in repetitive verbal/physical behavior of an aversive nature.
88 PUNISHES	<p><i>Actor 1 to Actor 2</i></p> <ul style="list-style-type: none"> (a) Refuses to give a tangible reward to Actor 2; (b) Refuses to grant a new privilege to Actor 2; (c) Removes or curtails an existing privilege from Actor 2; (d) Sends Actor 2 to Time-Out; (e) Slaps or spanks Actor 2 on hand or bottom mildly.
99 DISAPPROVES	<p><i>Actor 1 to Actor 2</i></p> <ul style="list-style-type: none"> (a) Smiles/laughs at Actor 2 (sarcastic); (b) Cries/sobs/whines while stating disapproval of Actor 2's behavior; (c) Objects to Actor 2's behavior, performance, physical appearance.
00 AGGRESSES/DESTROYS	<p><i>Actor 1 to Actor 2</i></p> <ul style="list-style-type: none"> (a) Cries/sobs/whines while stating disapproval of Actor 2 as a person; (b) Disapproves of Actor 2 as a person; uses profanity (interactional); (c) Attempts to/inflicts harm or injury to Actor 2. <p><i>Actor 1 to Situation</i></p> <ul style="list-style-type: none"> (d) Attempts to/destroys an inanimate object.

*Interact—A Computer-Based Coding and Data Management System***Table 2. Summary Definitions of Positive Behavior Codes**

<i>Codes</i>	<i>Definitions</i>
11 REJOICES	<p><i>Actor 1 to Situation</i></p> <ul style="list-style-type: none"> (a) Laughs (noninteractional); (b) Expresses pleasure about situation or external event; (c) Makes positive evaluation of self, behavior, performance, physical appearance; (d) Makes positive evaluation of Actor not present in observation area.
22 HELPS	<p><i>Actor 1 to Actor 2</i></p> <ul style="list-style-type: none"> (a) Spontaneously offers to help Actor 2; (b) Spontaneously performs a service intended to help Actor 2.
33 REWARDS	<p><i>Actor 1 to Actor 2</i></p> <ul style="list-style-type: none"> (a) Makes a tangible gift to Actor 2; (b) Grants a new privilege to Actor 2; (c) Extends an existing privilege to Actor 2.
44 APPROVES	<p><i>Actor 1 to Actor 2</i></p> <ul style="list-style-type: none"> (a) Smiles at Actor 2 (positive); (b) Smiles/laughs while stating approval of Actor 2's behavior, performance, physical appearance; (c) Approves of Actor 2's behavior, performance, physical appearance.
55 GIVES AFFECTION	<p><i>Actor 1 to Actor 2</i></p> <ul style="list-style-type: none"> (a) Smiles/laughs while stating approval of Actor 2 as a person; (b) Approves of Actor 2 as a person; (c) Expresses positive care, concern for Actor 2.

observational literature will notice that they parallel several definitions found in other systems, especially those of Forehand and McMahon (1981), Reid (1978), and Wahler et al. (1976).

Response Strings

Response strings summarize relatively discrete and, in most cases, instantaneous behaviors which one person displays in response to a neutral behavior just directed to him/her by another person. The syntax of response strings is as follows:

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proper positions as long as this simple syntax is observed. Summary definitions of all behavior codes, which are grouped into positive, neutral, and aversive codes, can be found in Tables 1, 2, and 3. Readers who are familiar with the

Table 1. Summary Definitions of Neutral Behavior Codes

<i>Codes</i>	<i>Definitions</i>
1 SEEKS ATTENTION/INTERACTION	<i>Actor 1 to Actor 2</i> (a) Seeks to direct attention to Actor 1; (b) Seeks to interact with Actor 2.
2 REQUESTS	<i>Actor 1 to Actor 2</i> (a) Seeks to obtain permission from Actor 2; (b) Seeks to obtain help from Actor 2.
3 COMMANDS-DIRECT	<i>Actor 1 to Actor 2</i> Seeks to exercise immediate control over Actor 2 through direct command, instruction, or order.
4 COMMANDS-INDIRECT	<i>Actor 1 to Actor 2</i> Seeks to exercise immediate control over Actor 2 through: (a) Suggestions; (b) Questions which seek control rather than information; (c) "Let's" statements; (d) "If . . . then" statements.
5 PRESCRIBES	<i>Actor 1 to Actor 2</i> Seeks to exercise delayed or long-term control over Actor 2 through: (a) Negative commands; (b) Future commands; (c) Impossible commands; (d) Standing rules.
6 CORRECTS/CONTRADICTS	<i>Actor 1 to Actor 2</i> (a) Attempts to correct a message just issued by Actor 2; (b) Opposes/contradicts a message just issued by Actor 2.
7 REASONS/WARNS	<i>Actor 1 to Actor 2</i> Provides Actor 2 with a reason or warning aimed at explaining or justifying a natural or imposed consequence or a request or instruction.
9 ENTERS	Actor 1 enters the observation area.
0 EXITS	Actor 1 leaves the observation area.

*Interact—A Computer-Based Coding and Data Management System***Table 5. Summary Definitions of Setting Codes**

<i>Codes</i>	<i>Definitions</i>
10 SHARES CLOSENESS	Target child shares emotionally neutral or positive physical contact with Actor 2 (including pet).
20 PLAYS	Target child, alone or with others: (a) Makes appropriate use of leisure materials; (b) Engages appropriately in playful verbal exchanges; (c) Interacts appropriately with a pet.
30 ROUGHS/TUMBLES	Target child, alone or with others: (a) Engages appropriately in physical exercises; (b) Engages appropriately in physical activities (e.g., wrestling, boxing).
40 READS/SINGS	Target child, alone or with others: (a) Reads or sings; (b) Plays a musical (not toy) instrument; (c) Listens to a story told by Actor 2 or presented on a record; (d) Listens to music.
50 WORKS	Target child, alone or with others: (a) Engages in a school-related task; (b) Engages in a household related task (e.g., chores); (c) Engages in self-help skills (except eating and drinking).
60 RESTS/INONINTERACTS	Target child: (a) Is not interacting or engaging in a constructive activity; (b) Uses leisure materials or moves parts of body in a ritualistic, repetitive, self-stimulating manner.
70 EATS/DRINKS	Target child eats or drinks with or without help from Actor 2.
80 CONFLICTS	Target child: (a) Engages in continuous complaining, sobbing, whining, or crying; (b) Engages in a verbal or physical disagreement with Actor 2.
90 TIME-OUT	Target child is sent or taken by Actor 2 to a Time-Out location.
19 TALKS/ATTENDS	Target child is, as his/her sole activity: (a) Engaged in a conversation; (b) Listening to a conversation.

name, observer name, actors present) and to select the length of time the observation will last for. The program itself automatically enters the date and time data collection actually begins, the time each entry is made, and the date and time data collection ends. A sample data file can be found in Table 6. It provides

Appendix C

Reliability Analyses:

Parent Daily Report - Depression (PDR-D)

Parent Daily Report - Child Behaviour
Problems (PDR-BP)

The Community Interaction Checklist -
Aversive Events (CIC-AE)

This appendix presents the corrected item-total correlations for each of the three scales as well as the reliability coefficient (Cronbach's alpha).

I. Parent Daily Report - Depression Score (PDR-D) (4 items).

Week 1: Corrected Item-Total Correlation (n=95)

Depressed (yes/no)	.27
Irritable (yes/no)	.33
Mood Rate (1-10)	.51
Sleep Rate (1-10)	.38
Alpha=	.48

Week 2: Corrected Item-Total Correlation (n=94)

Depressed (yes/no)	.42
Irritable (yes/no)	.35
Mood Rate (1-10)	.60
Sleep Rate (1-10)	.43
Alpha=	.55

Week 3: Corrected Item-Total Correlation (n=94)

Depressed (yes/no)	.27
Irritable (yes/no)	.32
Mood Rate (1-10)	.59
Sleep Rate (1-10)	.40
Alpha=	.52

Week 4: Corrected Item-Total Correlation (n=94)

Depressed (yes/no)	.43
Irritable (yes/no)	.48
Mood Rate (1-10)	.55
Sleep Rate (1-10)	.41
Alpha=	.54

Comment on the PDR-D

As can be seen, the internal consistency of the PDR-D scale shows it to be in the modest range consistently across the 4 weeks. Generally, scales that produce alphas greater than .6 are considered to show adequate reliability (Cronbach, 1951). The corrected item-total correlations are all above .2, suggesting their adequacy as scale items.

**II. Parent Daily Report - Behaviour Problem Score (PDR-BP)
(21 items).**

<u>Week 1:</u>	<u>Corrected Item-Total Correlation (n=95)</u>
Covert Item 1	.22
Covert Item 3	.25
Covert Item 4	.21
Covert Item 5	.26
Overt Item 1	.63
Overt Item 2	.59
Overt Item 3	.65
Overt Item 4	.11
Overt Item 5	.55
Overt Item 6	.49
Overt Item 7	.28
Overt Item 8	.40
Overt Item 9	.33
Overt Item 10	.40
Overt Item 11	.48
Overt Item 12	.21
Overt Item 14	.26
Overt Item 15	.21
Overt Item 16	.34
Overt Item 17	.31
Overt Item 18	.40

Alpha= .81

<u>Week 2:</u>	<u>Corrected Item-Total Correlation (n=94)</u>
Covert Item 1	.38
Covert Item 3	.24
Covert Item 4	.30
Covert Item 5	.39
Overt Item 1	.63
Overt Item 2	.45
Overt Item 3	.58
Overt Item 4	.24
Overt Item 5	.66
Overt Item 6	.40
Overt Item 7	.24
Overt Item 8	.55
Overt Item 9	.39
Overt Item 10	.52
Overt Item 11	.35
Overt Item 12	.24
Overt Item 14	.47
Overt Item 15	.31
Overt Item 16	.43
Overt Item 17	.50
Overt Item 18	.26

Alpha= .84

II. Parent Daily Report - Behaviour Problem Score (PDR-BP)
Cont'd.

<u>Week 3:</u>		<u>Corrected Item-Total Correlation (n=94)</u>
Covert Item 1		.32
Covert Item 3		.19
Covert Item 4		.28
Covert Item 5		.07
Overt Item 1		.57
Overt Item 2		.45
Overt Item 3		.56
Overt Item 4		.07
Overt Item 5		.56
Overt Item 6		.34
Overt Item 7		.39
Overt Item 8		.46
Overt Item 9		.31
Overt Item 10		.54
Overt Item 11		.44
Overt Item 12		.27
Overt Item 14		.50
Overt Item 15		.26
Overt Item 16		.52
Overt Item 17		.28
Overt Item 18		.48

Alpha= .82

<u>Week 4:</u>		<u>Corrected Item-Total Correlation (n=94)</u>
Covert Item 1		.58
Covert Item 3		.35
Covert Item 4		.25
Covert Item 5		.08
Overt Item 1		.58
Overt Item 2		.64
Overt Item 3		.56
Overt Item 4		.32
Overt Item 5		.60
Overt Item 6		.47
Overt Item 7		.19
Overt Item 8		.48
Overt Item 9		.27
Overt Item 10		.54
Overt Item 11		.28
Overt Item 12		.24
Overt Item 14		.43
Overt Item 15		.32
Overt Item 16		.49
Overt Item 17		.41
Overt Item 18		.36

Alpha= .84

Comment on the PDR-BP.

As can be seen, the PDR-BP scale produces consistently good reliability coefficients across the weeks. Generally, all items show adequate item-total correlations.

**III. Community Interaction Checklist - Aversive Events
(CIC-AE) (2 items)**

Week 1: Corrected Item-Total Correlation (n=95)
 Aversive Contacts .20
 Aversive Events .20

Alpha= .27

Week 2: Corrected Item-Total Correlation (n=95)
 Aversive Contacts .45
 Aversive Events .45

Alpha= .55

Week 3: Corrected Item-Total Correlation (n=94)
 Aversive Contacts .45
 Aversive Events .45

Alpha= .52

Week 4: Corrected Item-Total Correlation (n=95)
 Aversive Contacts .41
 Aversive Events .41

Alpha= .44

Comment on the CIC-AE.

As can be seen, week 1 CIC-AE shows an unacceptably low level of reliability. Weeks 2 through 4 show consistently modest levels of reliability. The item-total correlations suggest that both items are adequately related to a total aversive events scale.

Appendix D

**The Influence of Socioeconomic Status (SES) and
Socioeconomic Disadvantage (SED)**

Socioeconomic status (SES) and socioeconomic disadvantage (SED)

With respect to SES, data on family income in dollars was too incomplete to be utilized as an indicator of SES. Consequently, the importance of SES was explored by revising the Blishen codes: a code of 1 was assigned to families who received government assistance, to fit in with the 2-7 codes assigned to occupations of increasing status.

Given that recent treatment of SES has adopted a multiple-risk approach in an effort to better capture its hypothesized function as a contextual stressor (e.g., Patterson & Dishion, 1988; Rutter, 1978), a composite of SES-related factors was also used. Such multiplicative and cumulative effects of socioeconomic disadvantage has been focused upon as central to child maladjustment (e.g., Yoshikawa, 1994). The utility of considering multiple risks has been borne out when identifying where, traditionally successful interventions, as parent training, have met with limited success (Dumas & Wahler, 1983).

SED was defined in the current study with 4 risk indicators, in keeping with current research: (1) families relying on government assistance (24%) versus families with employment (72%; 4% missing), (2) single-mother families (single, separated, divorced, widowed, common-law less than 2 years) (36%) versus two-parent families (64%), (3) mothers without completed high school education (14%) versus those

with completed high school or more (86%) and (4) more than 2 children in the home (36%) versus 2 or fewer children in the home (60%; 4% missing). Thus, SED index (SEDI) scores could range from 0 (no disadvantage) to 4 (maximum disadvantage); the sample the mean was 1 ($M=1.09$, $SD=1.04$, range=0-4).

To recap, SES and SED were considered in subsequent analyses in an effort to ascertain whether: a) the positive study findings, especially that of cognitive mediation of distal depression, remained when SES was taken into account and b) SED, as a contextual stress variable, acted as a moderator of maternal depression. First, the correlations of SES and SED with demographic and study variables were considered. Table 23 identifies the correlations with SES and the SED index (SEDI). As can be seen, the utility of an SED composite is borne out by the significant correlations among the Blisshen (SES) variable and the other SES variables. That is, mothers who were relying on government assistance were also more likely to have single marital status, lower education and younger in age, although they were likely to have fewer children. As Table 23 shows, both SES and SEDI have similar patterns of significant correlations with "negative" study variables, and notably nonsignificant correlations with positive affect. This shows that financial and other social-environmental challenges tend to go together with higher ratings of child problem behaviour and aversive parenting.

Table 24.
Significant Correlations of SES and SEDI with Study Variables

	SES	SEDI
Demographics		
Mother age	.43	-.26*
Mother marital status	-.54	
Mother education	.47	
No. of children	.29	
Depression		
BDI	-.34	.31
CESD-Intake	-.35	.47
CESD-w1	-.32	.45
CESD-w2	-.37	.35
CESD-w3	-.34	.37
CESD-w4	-.32	.33
PDR-D w1	-.24*	.30
PDR-D w2	-.25*	.31
PDR-D w3	-.21*	.27
PDR-D w4	-.26*	.21*
Child Ratings		
ECBI-Intensity	-.36	.37
ECBI-Problem	-.33	.26*
PDR-BP w1	-.31	.30
PDR-BP w2	ns	.23*
PDR-BP w3	ns	.30
PDR-BP w4	ns	.35
Contextual Stress		
PSI-Social Isolation	-.25*	.33
Parenting		
A.P. w1	-.49	.48
A.P. w2	-.44	.49
A.P. w3	-.46	.45
A.P. w4	-.42	.48

Note. All correlations at $p < .01$; * $p < .05$; ns=non-significant
SES=Socioeconomic Status (Blisshen ratings)
SEDI=Socioeconomic Disadvantage Index (composite)
BDI=Beck Depression Inventory
CESD=Center for Epidemiological Studies' Depression Scale
PDR-D=Parent Daily Report-Depression
PDR-PB=Parent Daily Report-Child Problem Behaviours
ECBI-Eyberg Child Behavior Inventory
PSI=Parenting Stress Index
A.P.=Aversive Parenting

SES as a qualifier of study findings

These regressions were done in an effort to ascertain whether cognitive mediation of distal depression and the direct effects of proximal depression and perceptions were process mechanisms to be found across the range of SES, or whether they were primarily a function of their association to SES. Tables 24 through 28 contain the details of these analyses.

SES is clearly a potent correlate of aversive parenting, accounting for the majority of the variance, about 20%. This is consistent with the literature that low SES is linked to harsh discipline (e.g., Dodge et al., 1994; McLoyd et al., 1994). Maternal depression and child ratings add about another 10%, such that the total model accounts for 30-35% of the variance in aversive parenting. These analyses show that the cognitive mediation of distal depression and the direct effects of proximal depression and child ratings hold, generally. For example, if one considers prediction of week 4 aversive parenting, the cognitive mediation of distal depression is clearly seen when considering the intake Beck Depression Inventory; this would seem a particularly impressive finding as it is present even when SES is taken into account. Cognitive mediation of the intervening distal weeks (weeks 1-3) is not possible, given depression is not a significant predictor after considering SES; this not the case across all weeks, for example, in predicting week 3 aversive parenting, cognitive mediation of

Table 25.

Maternal Depression and Perceptions Predicting Week 4
Maternal Aversive Parenting, Controlling for SES

Independent variables	r _{IV,M}	Week 4		R ² total
		r _{IV,C}	Beta	
Intake:				
1. SES	-.36*	-.42*	-.42*	.18
2. BDI (change after step 3)	.55*	.42*	.24*	.23
3. Eyberg-Intensity			.15	.26
3. Eyberg-Intensity			.19	.26

1. SES	-.33*	-.42*	-.42*	.18
2. BDI (change after step 3)	.56*	.42*	.24*	.23
3. Eyberg-Problem			.13	.27
3. Eyberg-Problem			.23*	.27

1. SES	-.36*	-.42*	-.42*	.18
2. CESD-Intake (change after step 3)	.37*	.29*	.16	.20
3. Eyberg-Intensity			.10	.25
3. Eyberg-Intensity			.24*	.25

1. SES	-.33*	-.42*	-.42*	.18
2. CESD-Intake (change after step 3)	.40*	.29*	.16	.20
3. Eyberg-Problem			.08	.26
3. Eyberg-Problem			.27*	.26

Week 1:				
1. SES	-.31*	-.42*	-.42*	.18
2. PDR-D w1 (change after step 3)	.28*	.26*	.17	.21
3. PDR-BP w1			.08	.32
3. PDR-BP w1			.37*	.32

1. SES	-.31*	-.42*	-.42*	.18
2. CESD w1 (change after step 3)	.37*	.28*	.16	.20
3. PDR-BP w1			.06	.32
3. PDR-BP w1			.38*	.32

Week 2:				
1. SES	-.17	-.42*	-.42*	.18
2. PDR-D w2 (change after step 3)	.27*	.28*	.19**	.21
3. PDR-BP w2			.11	.30
3. PDR-BP w2			.31*	.30

1. SES	-.17	-.42*	-.42*	.18
2. CESD w2 (change after step 3)	.27*	.29*	.16	.20
3. PDR-BP w2			.08	.29
3. PDR-BP w2			.31*	.29

Independent variables	Week 4			R ² total
	rIV.M	rIV.C	Beta	
Week 3:				
1. SES	-.14	-.42*	-.42*	.18
2. PDR-D w3 (change after step 3)	.26*	.22*	.13 .07	.20
3. PDR-BP w3			.29*	.27

1. SES	-.14	-.42*	-.42*	.18
2. CESD w3 (change after step 3)	.21*	.24*	.11 .05	.19
3. PDR-BP w3			.30*	.27

Week 4:				
1. SES	-.15	-.42*	-.42*	.18
2. PDR-D w4 (change after step 3)	.23*	.38*	.29* .24*	.26
3. PDR-BP w4			.20*	.29

1. SES	-.15	-.42*	-.42*	.18
2. CESD w4 (change after step 3)	.25*	.26*	.14 .08	.20
3. PDR-BP w4			.23*	.25

* $p < .05$; ** $p < .06$

Note. IV=independent variable (depression); M=mediator variable (perceptions); C=criterion (aversive parenting) SES=socioeconomic status (Blisshen ratings) Beta=standardized regression coefficient, entering 1) SES 2) depression 3) perceptions
BDI=Beck Depression Inventory
CESD=Center for Epidemiological Studies' Depression Scale
PDR=Parent Daily Report
D-Depression
BP-Behaviour Problems

Table 26.

Maternal Depression and Perceptions Predicting Week 3
Maternal Aversive Parenting, Controlling for SES

Independent variables	Week 3			R ² total
	rIV.M	rIV.C	Beta	
Intake:				
1. SES	-.36*	-.46*	-.46*	.21
2. BDI	.55*	.33*	.20*	.25
(change after step 3)			.06	
3. Eyberg-Intensity			.29*	.30

1. SES	-.33*	-.46*	-.46*	.21
2. BDI	.56*	.33*	.20*	.25
(change after step 3)			.07	
3. Eyberg-Problem			.26*	.29

1. SES	-.36*	-.46*	-.46*	.21
2. CESD-Intake	.37*	.32*	.18	.24
(change after step 3)			.10	
3. Eyberg-Intensity			.30*	.31

1. SES	-.33*	-.46*	-.46*	.21
2. CESD-Intake	.40*	.32*	.18	.24
(change after step 3)			.09	
3. Eyberg-Problem			.27*	.30
Week 1:				
1. SES	-.31*	-.46*	-.46*	.21
2. PDR-D w1	.28*	.28*	.18	.24
(change after step 3)			.12	
3. PDR-BP w1			.26*	.30

1. SES	-.31*	-.46*	-.46*	.21
2. CESD w1	.37*	.34*	.21*	.25
(change after step 3)			.14	
3. PDR-BP w1			.25*	.30
Week 2:				
1. SES	-.17	-.46*	-.46*	.21
2. PDR-D w2	.27*	.29*	.18**	.24
(change after step 3)			.15	
3. PDR-BP w2			.16	.27

1. SES	-.17	-.46*	-.46*	.21
2. CESD w2	.27*	.32*	.17	.24
(change after step 3)			.13	
3. PDR-BP w2			.17	.26

Independent variables	rIV.M	Week 3		R ² total
		rIV.C	Beta	
Week 3:				
1. SES	-.14	-.46*	-.46*	.21
2. PDR-D w3 (change after step)	.26*	.34*	.25*	.27
3. PDR-BP w3			.21*	.30

1. SES	-.14	-.46*	-.46*	.21
2. CESD w3 (change after step 3)	.21*	.32*	.19**	.24
3. PDR-BP w3			.16	.28
			.20*	

* $p < .05$; ** $p < .06$

Note. IV=independent variable (depression)
M=mediator variable (perceptions)
C=criterion (aversive parenting)
SES=socioeconomic status (Blishen ratings)
Beta=standardized regression coefficient, entering
1) SES 2) depression 3) perceptions
BDI=Beck Depression Inventory
CESD=Center for Epidemiological Studies' Depression
Scale
PDR=Parent Daily Report
D-Depression
BP-Behaviour Problems

Table 27.

Maternal Depression and Perceptions Predicting Week 2
Maternal Aversive Parenting, Controlling for SES

Independent variables	Week 2		Beta	R ² total
	rIV.M	rIV.C		
Intake:				
1. SES	-.36*	-.44*	-.44*	.19
2. BDI	.54*	.37*	.25*	.25
(change after step 3)			.15	
3. Eyberg-Intensity			.21**	.28

1. SES	-.33*	-.44*	-.44*	.19
2. BDI	.54*	.37*	.25*	.25
(change after step 3)			.11	
3. Eyberg-Problem			.28*	.30

1. SES	-.36*	-.44*	-.44*	.19
2. CESD-Intake	.36*	.36*	.23*	.24
(change after step 3)			.17	
3. Eyberg-Intensity			.24*	.28

1. SES	-.33*	-.44*	-.44*	.19
2. CESD-Intake	.40*	.36*	.23*	.24
(change after step 3)			.14	
3. Eyberg-Problem			.29*	.31
Week 1:				
1. SES	-.31*	-.44*	-.44*	.19
2. PDR-D w1	.28*	.24*	.14	.21
(change after step 3)			.10	
3. PDR-BP w1			.20*	.25

1. SES	-.31*	-.44*	-.44*	.19
2. CESD w1	.37*	.38*	.27*	.26
(change after step 3)			.23*	
3. PDR-BP w1			.15	.28

Independent variables	Week 2		Beta	R ² total
	rIV.M	rIV.C		
Week 2:				
1. SES	-.17*	-.44*	-.44*	.19
2. PDR-D w2 (change after step 3)	.27*	.28*	.18** .16	.22
3. PDR-BP w2			.10	.23

1. SES	-.17*	-.44*	-.44*	.19
2. CESD w2 (change after step 3)	.27*	.28*	.14 .11	.21
3. PDR-BP w2			.11	.22

* $p < .05$; ** $p < .06$

Note. IV=independent variable (depression)
M=mediator variable (perceptions)
C=criterion (aversive parenting)
SES=socioeconomic status (Flishen ratings)
Beta=standardized regression coefficient, entering
1)SES 2)depression 3)perceptions
BDI. eck Depression Inventory
CESD=Center for Epidemiological Studies' Depression
Scale
PDR=Parent Daily Report
D-Depression
BP-Behaviour Problems

Table 28.

Maternal Depression and Perceptions Predicting Week 1
Maternal Aversive Parenting, Controlling for SES

Independent variables	Week 1			R ² total
	rIV.M	rIV.C	Beta	
Intake:				
1. SES	-.36*	-.49*	-.49*	.24
2. BDI	.55*	.36*	.24*	.29
(change after step 3)			.13	
3. Eyberg-Intensity			.24*	.33

1. SES	-.33*	-.49*	-.49*	.24
2. BDI	.56*	.36*	.24*	.29
(change after step 3)			.08	
3. Eyberg-Problem			.30*	.35

1. SES	-.36*	-.49*	-.49*	.24
2. CESD-Intake	.37*	.34*	.19	.27
(change after step 3)			.11	
3. Eyberg-Intensity			.27*	.33

1. SES	-.33*	-.49*	-.49*	.24
2. CESD-Intake	.40*	.34*	.19	.27
(change after step 3)			.08	
3. Eyberg-Problem			.32*	.35
Week 1:				
1. SES	-.31*	-.49*	-.49*	.24
2. PDR-D w1	.28*	.37*	.27*	.31
(change after step 3)			.20*	
3. PDR-BP w1			.28*	.37

1. SES	-.31*	-.49*	-.49*	.24
2. CESD w1	.37*	.40*	.27*	.31
(change after step 3)			.19*	
3. PDR-BP w1			.27*	.37

* $p < .05$

Note. IV-independent variable (depression)
M=mediator variable (perceptions)
C=criterion (aversive parenting)
SES=socioeconomic status (Blisshen ratings)
Beta=standardized regression coefficient, entering
1) SES 2) depression 3) perceptions
BDI=Beck Depression Inventory
CESD=Center for Epidemiological Studies' Depression
Scale
PDR=Parent Daily Report
D=Depression
BP=Behaviour Problems

week 1 was found. However, consistent with study findings, week 4 depression and week 4 ratings exert direct proximal effects. Thus, study findings are maintained, even when SES is taken into account. Interestingly, the cognitive mediation of distal depression across all 4 weeks is shown primarily with the BDI, which taps more cognitive symptoms of depression than the CES-D. This would serve to strengthen the hypothesis that cognitively depression-prone persons are those likely to display negative cognitive effects of distal depression.

SED as a moderator of depression

To recap the statistical criteria required to confirm moderator status, Baron and Kenny (1985) identify a single condition: the interaction between the predictor (depression) and the moderator (SED) must be significant. They further note that an interaction term can most easily be interpreted when the moderator is uncorrelated with both the predictor and the criterion. As noted above, SEDI did correlate with maternal depression and aversive parenting.

The analyses of SEDI as a moderator revealed only three instances of significant interaction. In predicting week 4 aversive parenting, the interaction between week 3 CESD and SEDI and between week 4 CESD and SEDI each accounted for 4% of unique variance ($F_{\text{change}}=4.42$, $F_{\text{change}}=4.73$, $p<.04$). These may suggest that proximal depression is amplified in the presence of SED; however, the lack of a patterning of results suggests this as an isolated finding. A significant

interaction was found in predicting week 2 positive affect. The interaction between week 2 daily mood (PDR-D) and SEDI accounted for 6% of unique variance ($F_{change}=6.04, p<.02$). Again, while this argues for the potential moderation of proximal depression by SED, there is no patterning of results in predicting positive affect.

Summary

To summarize, these results show that socioeconomic disadvantage is clearly associated with other negative aspects of the mother's personal and social life. It has been suggested that certain people seem to have more than their fair share of adversity and that this may not be a function of coincidence or bad luck (e.g., Coyne & Derogatis, 1986; Hammen, 1992). The possibility exists that the events in people's lives, including living in conditions of disadvantage, feeling depressed, seeing things and people around them in negative terms, experiencing social stress, and being aversive towards their child, may in fact be quite functional: to maintain dysfunctionality. For example, it has been suggested that such a constellation of aversive events converge towards maintaining organizing structures, such as internal working models and self-schemas, which are themselves linked to fundamental interpersonal and cognitive vulnerabilities (e.g., Blatt & Homann, 1992; Hammen, 1992).

The current investigation has failed to establish SED as a moderator of depression, leaving open the possibility that

SED may impact parenting through other processes (e.g., the availability of support). Clearly, SED is an important construct given its significant correlation with aversive parenting and is deserving of focused research attention. For example, an examination of the role of SED should identify the multiple domains upon which SED may impact (e.g. parent personality factors, working models of attachment, availability and capacity to access supports etc.) and compare such potential processes in high versus low SED groups.

Finally, these analyses show that cognitive mediation of distal depression by maternal ratings of child problem behaviour and the direct effect of proximal depression and perceptions do seem to function as process mechanisms in accounting for aversive parenting, as they exist even when SES is taken into account.

Appendix E

**Descriptive Statistics of Individual INTERACT Codes
Factor Analysis of INTERACT Codes**

I. Descriptive statistics of individual INTERACT codes.

The following table presents the descriptive statistics of the individual codes of interest (baserates) in the present study. As can be seen, many of the codes are fairly low frequency occurrences. Amongst these codes, maternal approval and disapprovals have the highest mean frequencies.

Table 29.
Descriptive Statistics of INTERACT Mother-To-Child Codes

	Mean	S.D.	Min.	Max.
WEEK 1 (N=95)				
Aversive Codes:				
Annoys	.00	.01	.00	.05
Punishes	.00	.01	.00	.03
Disapproves	.06	.04	.00	.20
Aggresses	.00	.00	.00	.03
Neutral Codes with Negative Affect:				
Seeks Attention (-)	.00	.00	.00	.01
Commands Directly (-)	.01	.03	.00	.16
Commands Indirectly (-)	.00	.01	.00	.04
Prescribes (-)	.01	.02	.00	.10
Corrects (-)	.00	.00	.00	.03
Reasons/Warns (-)	.00	.00	.00	.01
Instructs (-)	.00	.00	.00	.01
Positive Codes:				
Helps	.02	.02	.00	.13
Rewards	.00	.00	.00	.01
Approves	.08	.06	.00	.27
Gives Affection	.03	.03	.00	.18
Neutral Codes with Positive Affect:				
Seeks Attention (+)	.00	.01	.00	.04
Requests (+)	.00	.00	.00	.01
Commands Directly (+)	.02	.02	.00	.15
Commands Indirectly (+)	.01	.01	.00	.07
Prescribes (+)	.01	.01	.00	.05
Corrects (+)	.00	.00	.00	.03
Reasons/Warns (+)	.00	.01	.00	.07
Instructs (+)	.00	.00	.00	.02
WEEK 2 (N=95)				
Aversive Codes:				
Annoys	.01	.02	.00	.13
Punishes	.00	.01	.00	.03
Disapproves	.06	.04	.00	.17
Aggresses	.00	.01	.00	.13
				229.
	Mean	S.D.	Min.	Max.

	Mean	S.D.	Min.	Max.
Neutral Codes with Negative Affect:				
Seeks Attention (-)	.00	.00	.00	.03
Commands Directly (-)	.02	.03	.00	.26
Commands Indirectly (-)	.00	.01	.00	.04
Prescribes (-)	.02	.02	.00	.13
Corrects (-)	.00	.00	.00	.03
Reasons/Warns (-)	.00	.00	.00	.04
Instructs (-)	.00	.00	.00	.00
Positive Codes:				
Helps	.02	.02	.00	.11
Rewards	.00	.00	.00	.01
Approves	.09	.06	.00	.30
Gives Affection	.03	.03	.00	.17
Neutral Codes with Positive Affect:				
Seeks Attention (+)	.00	.00	.00	.02
Requests (+)	.00	.00	.00	.03
Commands Directly (+)	.02	.03	.00	.13
Commands Indirectly (+)	.01	.01	.00	.04
Prescribes (+)	.01	.01	.00	.06
Corrects (+)	.00	.00	.00	.01
Reasons/Warns (+)	.00	.01	.00	.06
Instructs (+)	.00	.00	.00	.02
WEEK 3 (N=94)				
Aversive Codes:				
Annoys	.01	.02	.00	.09
Punishes	.00	.01	.00	.04
Disapproves	.07	.06	.00	.30
Aggresses	.00	.01	.00	.08
Neutral Codes with Negative Affect:				
Seeks Attention (-)	.00	.00	.00	.01
Commands Directly (-)	.02	.03	.00	.21
Commands Indirectly (-)	.01	.01	.00	.06
Prescribes (-)	.02	.03	.00	.12
Corrects (-)	.00	.00	.00	.02
Reasons/Warns (-)	.00	.00	.00	.01
Instructs (-)	.00	.00	.00	.01

	Mean	S.D.	Min.	Max.
Positive Codes:				
Helps	.02	.02	.00	.09
Rewards	.00	.00	.00	.01
Approves	.07	.06	.00	.33
Gives Affection	.03	.03	.00	.13
Neutral Codes with Positive Affect:				
Seeks Attention (+)	.00	.00	.00	.02
Requests (+)	.00	.00	.00	.03
Commands Directly (+)	.02	.02	.00	.13
Commands Indirectly (+)	.01	.01	.00	.04
Prescribes (+)	.01	.01	.00	.05
Corrects (+)	.00	.00	.00	.02
Reasons/Warns (+)	.00	.01	.00	.05
Instructs (+)	.00	.00	.00	.02
WEEK 4 (N=95)				
Aversive Codes:				
Annoys	.01	.02	.00	.08
Punishes	.00	.01	.00	.03
Disapproves	.07	.05	.00	.21
Aggresses	.00	.01	.00	.07
Neutral Codes with Negative Affect:				
Seeks Attention (-)	.00	.01	.00	.07
Commands Directly (-)	.02	.03	.00	.20
Commands Indirectly (-)	.00	.01	.00	.03
Prescribes (-)	.02	.03	.00	.15
Corrects (-)	.00	.00	.00	.02
Reasons/Warns (-)	.00	.00	.00	.02
Instructs (-)	.00	.00	.00	.02
Positive Codes:				
Helps	.02	.02	.00	.08
Rewards	.00	.00	.00	.01
Approves	.07	.05	.00	.21
Gives Affection	.03	.03	.00	.13
Neutral Codes with Positive Affect:				
Seeks Attention (+)	.00	.00	.00	.02
Requests (+)	.00	.00	.00	.03
Commands Directly (+)	.02	.02	.00	.10
Commands Indirectly (+)	.01	.01	.00	.05
Prescribes (+)	.01	.01	.00	.07
Corrects (+)	.00	.00	.00	.01
Reasons/Warns (+)	.00	.00	.00	.03
Instructs (+)	.00	.00	.00	.01

II. Principal Components Factor Analysis of INTERACT codes.

The following analyses detail the basis on which the INTERACT categories of Aversive Parenting and Positive Affect were formed. As noted, the individual indicators differed somewhat; however, generally consistent patterns were obtained for the factors. Thus, Aversive Parenting (Factor 1) was defined as a composite of the aversive behaviour codes (annoys, disapproves, punishes, aggresses) which loaded positively, the neutral behaviour codes with negative affect (seeks attention, commands direct, commands indirect, prescribes, corrects) which loaded positively, and two positive behaviour codes which loaded negatively (helps, approves). Factor 1 accounted for 18-19% of the variance in the INTERACT codes. Positive Affect (Factor 2) was defined as a composite of the neutral behaviour codes with positive affect (seeks attention, requests, commands direct, commands indirect, prescribes, corrects) and one positive behaviour code (affection), all loading positively. Factor 2 accounted for 11-16 % of the variance in INTERACT codes. Thus, both factors together accounted for about 35% of the variance in the observational data which is generally consistent with other studies (e.g., Tarullo et al., 1994).

Week 1:Factor 1 (11 codes; % variance= 17.6)

Rotated Factor Matrix:	Loading
disapproves	.70
prescribes-negative	.67
commands direct-negative	.65
approves	-.65
commands indirect-negative	.51
seeks attention-negative	.47
helps	-.44
punishes	.43
aggresses	.38
annoys	.35 -loads also on Factor 2
(affection	-.31) -loads also on Factor 2

Factor 2 (7 codes; % variance=14.7)

Rotated Factor Matrix:	Loading
prescribes-positive	.83
seeks attention-positive	.75
corrects-positive	.57
commands indirect-positive	.55
requests-positive	.54
(annoys	.50)
affection	.39

Note. Brackets are used when these items were not used to eventually define that particular factor. This decision was made on the basis of either inconsistent occurrence across the 4 weeks or on the majority of weeks, the loadings were higher on the factor it was eventually assigned to. It is noted that annoys loads on Factor 2; while this may seem counterintuitive, it may be a function of how affection was coded. For example, if any behaviour was coded repeatedly it could then be coded as annoys if it was deemed as potentially annoying by the coder. This would include physical rough and tumble type of displays which was also coded as physical affection and, if they continued to the point of intrusiveness, coding switched from affection to annoys.

Week 2:Factor 1 (12 codes; % variance= 19.2)

Rotated Factor Matrix:	Loading
prescribes-negative	.72
disapproves	.69
annoys	.63
commands indirect-negative	.62
commands direct-negative	.61
approves	-.56
aggresses	.56
helps	-.47
seeks attention-negative	.37
(requests-positive	-.35)
punishes	.32
corrects-negative	.33 -also loads on Factor 2

Factor 2 (7 codes; % variance=10.8)

Rotated Factor Matrix:	Loading
commands indirect-positive	.70
prescribes-positive	.59
corrects-positive	.53
affection	.49
commands direct-positive	.42
(corrects-negative	-.40)
requests-positive	.54

Week 3:**Factor 1 (10 codes; % variance= 18.3)**

Rotated Factor Matrix:	Loading
approves	-.70
commands direct-negative	.70
disapproves	.69
prescribes-negative	.67 -also loads on Factor 2
commands indirect-negative	.55
aggresses	.53
corrects-negative	.47
annoys	.41 -also loads on Factor 2
punishes	.37
seeks attention-negative	.31 -also loads on Factor 2

Factor 2 (9 codes; % variance=15.6)

Rotated Factor Matrix:	Loading
prescribes-positive	.76
commands indirect-positive	.71
seeks attention-positive	.71
(seeks attention-negative	.61)
commands direct-positive	.60
corrects-positive	.54
affection	.30
(prescribes-negative	.33)
(annoys	.32)

Week 4:**Factor 1 (10 codes; % variance= 19.1)**

Rotated Factor Matrix:	Loading
disapproves	.78
prescribes-negative	.75
approves	-.59
commands indirect-negative	.54
commands direct-negative	.54
punishes	.52
helps	-.46 -also loads on Factor 2
aggresses	.44
prescribes-positive	.33 -also loads on Factor 2
annoys	.51 -also loads on Factor 2

Factor 2 (8 codes; % variance=12.2)

Rotated Factor Matrix:	Loading
prescribes-positive	.73
affection	.59
(annoys	.56)
(approves	.48)
seeks attention-positive	.46
requests-positive	.42
corrects-positive	.33
(helps	.39)

Appendix F

**Correlation among Maternal Depression and Ratings of
Child Problem Behaviour**

This appendix contains the correlations between maternal depression and maternal ratings of the child within each time frame (Table 29). These suggest significant levels of association whether earlier depression and subsequent child ratings (week 1 depression, week 2 ratings) or whether earlier child ratings and subsequent depression is considered (week 1 depression, week 2 ratings). Thus, they seem consistent with a reciprocal relationship between depression and cognitive appraisal of the child, which is found in the adult depression literature identifying depression as related to negative thinking and negative thinking contributing to depression (Hammen, 1992). In order to ascertain differences in the strength of the direction of this association, the two models (depression causing negative appraisal; negative appraisal causing depression) could be compared directly.

Table 30.

The Correlation Between Maternal Depression and Perceptions
Across Time

Child Ratings: Intake Depression	ECBI-I	Week 1 PDR-BP	Week 2 PDR-BP	Week 3 PDR-BP	Week 4 PDR-BP
Intake					
BDI	.54*	.42*	.30*	.25*	.30*
CESD	.36*	.33*	.22*	.22*	.27*
Week 1					
CESD	.40*	.37*	.33*	.26*	.23*
PDR-D	.27*	.28*	.18	.08	.07
Week 2					
CESD	.42*	.45*	.27*	.18*	.15
PDR-D	.29*	.37*	.27*	.22*	.20
Week 3					
CESD	.40*	.38*	.28*	.21*	.23*
PDR-D	.39*	.31*	.18	.26*	.18
Week 4					
CESD	.44*	.44*	.30*	.19	.25*
PDR-D	.49*	.35*	.26*	.13	.23*

* $p < .05$ Note.

BDI = Beck Depression Inventory
 CESD = Center for Epidemiological Studies'
 Depression Scale
 PDR-D = Parent Daily Report - Depression
 ECBI-I = Eybery Child Behavior Inventory -
 Intensity Scale
 PDR-BP = Parent Daily Report - Behavior Problems

Appendix G

The Influence of Child Age and Gender

Child age and gender effects have not been incorporated in current models of parenting, and are generally not noted in studies on maternal depression and parenting. Consequently, it was not proposed as a study variable. However, preliminary analyses were conducted to assess the extent to which child age and gender should be considered empirically. Correlations with the study variables and other demographic variables yielded no significant correlations. As a result, these variables were not considered further in the current study.

It is not surprising to find insignificant correlations with age in this community sample, as dramatic developmental shifts do not occur within the age range characterizing the majority of this study's sample. Also, insignificant correlations with parenting and child gender could be expected since only mothers were examined in the current study, and it has been fathers rather than mothers that have more reliably shown differentiated parenting practices with boys and girls (e.g., Lytton & Romney, 1991).

At first, the lack of association between child gender and ratings of problem behaviour may seem surprising. Boys are overrepresented in the externalizing disorders of attention-deficit hyperactivity disorder, oppositional defiant disorder, and conduct disorder (Zahn-Waxler, 1993). However, this study involved a community not clinical sample, and a full range of externalizing behaviour was not

the focus, although noncompliance and difficult behaviours were measured.

Studies of non-risk populations have shown inconsistent evidence that boys are less compliant, less receptive to socialization messages, more unruly and hard-to-manage and more physically aggressive than girls (Zahn-Waxler, 1993). For example, using peer nomination to identify aggressive children in grades 4 to 6, Lyons, Servin and Marchessault (1988) did not find any interactions of sex with aggressive classification. Similar findings have emerged with younger children; 2-year old boys and girls were found not to differ in "typical or expected" aggression (e.g., toy disputes), but boys displayed more dysregulated aggression which was predictive of later externalizing problems (Zahn-Waxler, Iannotti, Cummings, & Denham, 1990). This is not to say that child age and gender are not important variables of study in parenting. Rather, it would seem that they deserve focused research attention within a theoretical framework which details the influence of child age and gender on parental behaviour, in the context of various parental variables.

Appendix H

The Topography of Parenting under Maternal Depression

This study utilized a factor analytic approach to defining parental behaviour, rather than a focus on individual behaviours. From a parenting intervention perspective, it is of interest to ascertain whether a distinct "topography" of parental behaviour exists that is particular to maternal depression, as it would increase treatment specificity.

Research has not yet identified reliably a discrete pattern of deficits, although both specific and global deficits have been associated with depression (Downey & Coyne, 1990). For example, a trend for depressed mothers to spank more frequently than nondepressed mothers has been reported (Webster-Stratton & Hammond, 1988). Although not specifically tied to depression, mothers of clinic-referred conduct problem children tend to have elevated depression scores and have reliably been found to issue a greater frequency of vague, indirect commands to the child (Williams & Forehand, 1984). Thus, assessing for a distinct topography may reveal qualitatively different strategy-use, such as a more restricted range or uncommon strategies.

To address this issue, correlational analyses were run with the INTERACT codes and depression measures. In the discussion of these results, potential theoretical mechanisms are identified and follow-up analyses are suggested.

Table 31 contains the significant correlations. Codes

which did not correlate significantly with depression included: mother annoys child, mother reasons/warns child negatively, mother seeks child's attention positively, mother makes requests to child positively, mother commands child directly positively, mother corrects child positively, and mother instructs child positively. Codes which correlated in an inconsistent fashion included: mother helps/apologizes to child, mother rewards child, mother gives affection to the child, mother prescribes to child positively, and mother reasons/warns child positively.

Although negative results are difficult to interpret, one possibility is that depression does not interfere with a mother's ability to be "good" to others, in this case, her child. This is suggested by: (1) the lack of consistent association between depression and the use of positives when directing the child's behaviour (i.e., requests to child, attention-seeking, direct commands, prescriptions, instructing, corrects, reasoning), and (2) the lack of consistent association of depression with positive behaviours to the child (helps, rewards, gives affection). It is noted that some isolated significant findings would suggest that depression is negatively related to positive affect (gives affection, commands indirectly with positive affect) as well as being positively related to some positive affect and strategies (mother rewards child, prescribes child positively, reasons/warns child positively). Because

a pattern of associations was not revealed across the weeks, these findings are not deemed robust.

Also, it is interesting to note that depression was not associated with overtly intrusive behaviour (annoys), as one might expect from the literature on depressed mothers of infants (Blatt & Homann, 1992). With respect to the codes that were consistently associated with depression, three findings emerge.

Finding 1. Depression is associated with the high frequency codes: maternal disapproval and maternal approval.

Depression seems to make the use of approval less likely. While the common positive strategy seems less available to depressed mothers, the most common aversive strategy seems readily accessed. This may be related to the increased level of effort implicated in the use of approvals to the child in the context of depression, especially those contingent on child appropriate behaviour, and the decreased level of effort and attention implicated in use of disapproval (Zussman, 1980). As discussed in the introduction, depression seems to favour cognitive processing of negative material, and depression has been shown to interfere with effortful, but not automatic processing (e.g., Hartlage et al., 1993).

A question that could be raised is whether this represents an "over-reliance" on common aversive tools, such that their effectiveness in managing child conduct is

diminished. Such a question would necessitate comparing depressed versus non-depressed parents and their children's extended chains of behaviour (e.g., child misconduct - mother disapproval - child correction/continue misconduct).

Finding 2. In addition to high frequency aversive codes, depression was associated with lower frequency aversive codes; punishment (including physical punishment, privilege removal, time out), maternal aggression (e.g. "you are a bad girl"), seeking the child's attention with negative affect (e.g., John!!!!), issuing direct commands with negative affect, teaching/instructing with negative affect. This suggests that depression increases the likelihood of negative affective displays, at times in the presence of neutral interactions (engagement attempts, instruction), suggesting an irritable and impatient quality in maternal parental behaviour. Also, ineffective strategies such as indirect commands may be rendered even less effective by the accompanying negative affect. However, perhaps the most significant associations are the fact that maternal punitiveness (punishment, aggression) is associated with depression. This is consistent with the finding that depression is associated with the use of punishment (e.g., Webster-Stratton & Hammond, 1988), although the present study did not tease out physical versus verbal punishment and aggression.

The heightened use of such codes raises the issue of a

"derailment" in mother-child interaction, as it may be signifying an "explosive" parental response, at least in the case of maternal "aggression." This suggests that as depression increases, there may be a greater risk of mismatch of parental response to child behaviour, such that the parental response resembles a "lashing out" at the child. Again, this notion of fit or matching necessitates the use of extended chains of conditional probabilities, to ascertain whether depressed mothers move quickly to explosive parenting or whether a period of parental nonresponse or ineffective response precedes it.

Other researchers have found explosive discipline to be uncorrelated to measures of child antisocial behaviour (Baldwin & Skinner, 1989), suggesting that it may be more of a function of parental variables. Maternal depression has been related to mismatches with infant behavioural cues (Tronick & Galliano, 1986), suggesting that depression may make appropriate contingency in parental response more difficult.

Certainly, a possibility is that depressed mothers are not good modulators of their own affect. As a consequence, one would expect depressed mothers to be poor mutual regulators with their child (Field et al., 1990). Tronick and Gianino (1986) specify that "the 'depressed' mother, because of her own emotional state, fails to respond to her infant's other-directed regulatory signals and thus fails to

provide the infant with appropriate regulatory help" (p. 9).

Poor modulation may lead to a variety of outcomes. For example, depression may render parents (1) labile and unpredictable or (2) escalating and predictable in interaction with their child. With respect to lability, Radke-Yarrow and Zahn-Waxler (1990) suggest that depressed mothers may move quickly into intrusive positive affect when under stress or agitated. Yet these authors also identified affective stability across both well and depressed mothers. A subset of mothers, despite their diagnoses, were observed to be adept at recognizing the early indications of child behaviour problems and were able to "shift" parental direction, that is, retain control of their affect and opt out of escalation or head-off problematic interactions.

Studies have demonstrated a matching of mother aversiveness to child aversiveness. For example, Field et al. (1990) found postpartum depressed mothers and their infants matched negative behaviour states (anger/poke) more often than did nondepressed dyads. Panaccione and Wahler (1986) found that given child aversiveness, maternal aversiveness was found to be 4 times higher than its base rate. Similarly, Synder et al. (1993) found that compared to mothers of non-clinic children, mothers of clinic-referred conduct problem children continued to match their children's aversive behaviour, from low levels through to high levels, whereas control mothers escalated downwards

from moderate levels and never matched their children's high levels of aversiveness. A logical follow-up question, then, would be whether depression can be shown to be associated with escalating or labile emotional responding in interactions (e.g., maternal aversiveness, followed by maternal positiveness; the number of affective switches over short intervals).

Another future consideration with respect to maternal punitiveness would be its impact on child adjustment and development. In considering the effect of such punitive parenting, one would expect interactive "repairs" to be more difficult, leaving the child (and likely the mother) with negative affective associations to interactions. This would be consistent with the postulation that the parental behaviour of depressed mothers engenders feelings of shame and, ultimately, damaged self-constructs in the child, particularly operative during toddlerhood (Blatt & Homann, 1992). Research has shown greater guilt feelings in young children of depressed mothers as compared to children of well mothers (Zahn-Waxler et al., 1990). Thus, it may be the punitive nature of depressed mothers' interaction, not just an increased level of general aversiveness, that is linked to child maladjustment.

An alternative interpretation of the increased use of low-frequency aversive codes is that these strategies are used equally among depressed and nondepressed mothers, but

that depressed mothers were more likely to display these in front of an observer. This possibility may be consistent with the increased detachment from others and decreased attention to the environment that is associated with depression (Beck et al., 1979).

Finding 3. These correlational analyses fail to identify clear directionality among depression and specific codes. Significant correlations are found with earlier parenting and subsequent depression (e.g., week 1 maternal disapproval with intake through week 4 depression), raising the possibility that maternal parental behaviour contributes to subsequent depressive symptomatology. Since significant correlations were found between earlier depression and subsequent parenting (e.g., intake depression and week 4 maternal disapproval), the nature of the relationship between maternal parental behaviour and depression may be reciprocal.

In summary, it does seem that the "topography" of parenting under the influence of depression is different. Depression is associated with parental behaviours suggesting increased negative affect, increased ineffective strategy use, decreased positive strategy use, and more over, increased punitiveness. This suggest a more restricted parental repertoire under the influence of depression.

An interesting follow-up question would be whether these results vary across severity and chronicity of depression,

for example, whether as depression becomes more severe, a more withdrawn and less punitive style of parenting emerges. Severity of maternal depression has been found to be related to mothers' flatness of affect, anger, and intrusiveness during mother-infant interactions (Lyons-Ruth et al., 1986).

Table 31.

Significant Correlations ($p < .05$) between Maternal Depression Measures and Individual INTERACT codesAversive Codes.

Mother punishes child (a88c) = time-out, privilege removal, physical punishment etc.

Variables	a88c:	week 1	week 2	week 3	week 4
BDI - intake		-	-	.27	.26
CESD - intake		-	-	-	-
CESD - week 1		-	-	-	-
PDR-D - week 1		-	-	.25	-
CESD - week 2		-	.22	.43	.36
PDR-D - week 2		-	.21	-	.23
CESD - week 3		-	-	.24	-
PDR-D - week 3		-	-	-	-
CESD - week 4		-	-	.24	-
PDR-D - week 4		-	-	.22	.33

Mother disapproves of child's behaviour (a99c) = verbal and nonverbal reproach of child conduct etc.

Variables	a99c:	week 1	week 2	week 3	week 4
BDI - intake		.40	.41	.30	.25
CESD - intake		.32	.38	.24	.22
CESD - week 1		.35	.35	-	-
PDR-D - week 1		.26	-	-	-
CESD - week 2		.36	.29	.23	-
PDR-D - week 2		.21	.21	.21	-
CESD - week 3		.34	.25	-	-
PDR-D - week 3		-	-	-	-
CESD - week 4		.28	.30	-	-
PDR-D - week 4		.35	.37	.40	.24

Note. BDI = Beck Depression Inventory
 CESD = Center for Epidemiological Studies' Depression Scale
 PDR-D = Parent Daily Report - Depression Scale

Mother aggresses against the child (a00c) = verbal admonishes of the child, physical attacks on the child etc.

Variables	a00c:	week 1	week 2	week 3	week 4
BDI - intake	-	-	-	-	.29
CESD - intake	-	.46	.35	.46	
CESD - week 1	.27	.56	.44	.54	
PDR-D - week 1	-	-	-	-	
CESD - week 2	-	-	-	-	
PDR-D - week 2	-	-	-	.23	
CESD - week 3	-	.27	.21	.30	
PDR-D - week 3	-	-	-	.28	
CESD - week 4	-	.23	-	.30	
PDR-D - week 4	-	.36	.32	.45	

Mother seeks child's attention with negative affect (a1c-) = engagement attempts issued with verbal and nonverbal affective (vocal, facial and gestural indications of anger, hostility, irritability)

Variables	a1c-:	week 1	week 2	week 3	week 4
BDI - intake	-	.37	.37	-	-
CESD - intake	-	-	.23	-	-
CESD - week 1	-	-	-	-	-
PDR-D - week 1	-	-	.21	-	-
CESD - week 2	-	.29	.35	.23	
PDR-D - week 2	-	-	.22	-	
CESD - week 3	-	.36	.34	-	
PDR-D - week 3	-	.28	.23	-	
CESD - week 4	-	.28	.27	-	
PDR-D - week 4	-	-	-	-	

Note. BDI = Beck Depression Inventory
 CESD = Center for Epidemiological Studies' Depression Scale
 PDR-D = Parent Daily Report - Depression Scale

Mother commands the child directly with negative affect (a3c-) = direct command, instruction, and order to direct child conduct with verbal and nonverbal negative affective expressions

Variables	a3c-:	week 1	week 2	week 3	week 4
BDI - intake		.22	-	.27	.25
CESD - intake		.39	.24	.39	.29
CESD - week 1		.42	.28	.39	.22
PDR-D - week 1		-	-	-	-
CESD - week 2		.21	-	.28	-
PDR-D - week 2		.22	-	.22	.22
CESD - week 3		.30	-	.37	-
PDR-D - week 3		.28	-	.24	-
CESD - week 4		.23	-	.31	-
PDR-D - week 4		.38	.21	.22	.23

Mother commands indirectly to child with negative affect (a4c-) = indirect instruction, suggestion to direct child conduct with verbal and nonverbal negative affective expression

Variables	a4c-:	week 1	week 2	week 3	week 4
BDI - intake		-	.23	-	-
CESD - intake		.22	.25	-	-
CESD - week 1		-	.22	.27	-
PDR-D - week 1		-	-	-	-
CESD - week 2		-	-	-	-
PDR-D - week 2		-	-	-	-
CESD - week 3		-	.22	-	-
PDR-D - week 3		.28	.21	-	-
CESD - week 4		-	-	-	-
PDR-D - week 4		.37	.26	.23	.23

Note. BDI = Beck Depression Inventory
 CESD = Center for Epidemiological Studies' Depression Scale
 PDR-D = Parent Daily Report - Depression Scale

Mother prescribes to the child with negative affect (a5c-) - future-oriented commands (house rules, impossible commands) with verbal and nonverbal negative affective expressions

Variables	a5c-:	week 1	week 2	week 3	week 4
BDI - intake	-	-	.21	-	.28
CESD - intake	-	-	-	-	-
CESD - week 1	-	-	-	-	-
PDR-D - week 1	.24	-	-	.23	-
CESD - week 2	-	-	-	-	.24
PDR-D - week 2	-	-	-	-	.22
CESD - week 3	-	-	-	-	-
PDR-D - week 3	-	-	-	.23	-
CESD - week 4	-	-	-	-	-
PDR-D - week 4	.21	-	-	.25	.25

Mother corrects the child with negative affect (a6c-) = direct statements opposing, correcting, and contradicting child's conduct with verbal and nonverbal negative affective expression

Variables	a6c-:	week 1	week 2	week 3	week 4
BDI - intake	-	-	-	-	-
CESD - intake	-	-	.31	-	-
CESD - week 1	-	-	.40	-	-
PDR-D - week 1	.35	-	-	-	-
CESD - week 2	-	-	-	-	-
PDR-D - week 2	-	-	-	-	-
CESD - week 3	-	-	-	-	-
PDR-D - week 3	-	-	-	-	-
CESD - week 4	-	-	-	-	-
PDR-D - week 4	.23	-	.26	-	-

Note. BDI = Beck Depression Inventory
 CESD = Center for Epidemiological Studies' Depression Scale
 PDR-D = Parent Daily Report - Depression Scale

Mother instructs child with negative affect (a8c-) = education attempts (teach, inform) child with verbal and nonverbal negative affective expressions

Variables	a8c-:	week 1	week 2	week 3	week 4
BDI - intake		.37	.38	-	.23
CESD - intake		-	-	-	-
CESD - week 1		.31	.26	-	-
PDR-D - week 1		-	-	-	-
CESD - week 2		-	.24	-	-
PDR-D - week 2		-	-	-	-
CESD - week 3		.22	.25	-	-
PDR-D - week 3		.31	.27	-	-
CESD - week 4		-	.22	-	-
PDR-D - week 4		.30	-	-	-

Positive Codes

Mother helps/apologizes to child (a22c) = assistance and reparation attempts to child

Variables	a22c:	week 1	week 2	week 3	week 4
BDI - intake		-	-	-	-.21
CESD - intake		-	-	-	-
CESD - week 1		-	-	-	-
PDR-D - week 1		-	-	-	-
CESD - week 2		-	-	-.22	-
PDR-D - week 2		-	-	-.22	-
CESD - week 3		-	-	-	-
PDR-D - week 3		-	-	-	-
CESD - week 4		-	-	-	-
PDR-D - week 4		-	-	-	-.23

Note. BDI = Beck Depression Inventory
 CESD = Center for Epidemiological Studies' Depression Scale
 PDR-D = Parent Daily Report - Depression Scale

Mother rewards child (a33c) = tangible positive reinforcement (token, candy, privilege granting/extending) to child

Variables	a33c:	week 1	week 2	week 3	week 4
BDI - intake		-	-	-	-
CESD - intake		-	-	-	-
CESD - week 1		-	-	-	-
PDR-D - week 1		-	-	-	-
CESD - week 2		-	-	-	-
PDR-D - week 2		-	-	-	-
CESD - week 3		-	-	-	-
PDR-D - week 3		-	-	.23	-
CESD - week 4		-	-	-	-
PDR-D - week 4		-	-	.23	-

Mother approves of child behaviour (a44c) = positive verbal and nonverbal response to child conduct

Variables	a44c:	week 1	week 2	week 3	week 4
BDI - intake		-.27	-.31	-.26	-.28
CESD - intake		-.22	-	-	-.22
CESD - week 1		-.30	-.23	-.22	-.23
PDR-D - week 1		-.39	-.26	-.27	-.26
CESD - week 2		-.32	-.28	-.27	-.30
PDR-D - week 2		-.40	-.27	-.26	-.28
CESD - week 3		-.31	-.25	-.28	-.25
PDR-D - week 3		-.35	-.23	-.31	-.27
CESD - week 4		-.30	-.25	-.27	-.29
PDR-D - week 4		-.45	-.34	-.33	-.31

Note. BDI = Beck Depression Inventory
 CESD = Center for Epidemiological Studies' Depression Scale
 PDR-D = Parent Daily Report - Depression Scale

Mother gives affection to the child (a55c) = positive verbal and nonverbal indications of love, care, concern, value for the child as a person

Variables	a55c:	week 1	week 2	week 3	week 4
BDI - intake		-	-.21	-	-
CESD - intake		-	-	-	-
CESD - week 1		-	-	-.25	-.23
PDR-D - week 1		-	-	-	-
CESD - week 2		-	-	-	-
PDR-D - week 2		-	-	-	-
CESD - week 3		-	-	-	-
PDR-D - week 3		-	-	-	-
CESD - week 4		-	-	-	-
PDR-D - week 4		-	-	-	-.24

Mother commands indirectly to child with positive affect (a4c+) = indirect instruction, suggestion to direct child conduct with verbal and nonverbal positive affect (vocal, facial, and gestural indications of warmth, enthusiasm etc.)

Variables	a4c+:	week 1	week 2	week 3	week 4
BDI - intake		-	-	-.21	-
CESD - intake		-	-	-.23	-.23
CESD - week 1		-	-	-.23	-.23
PDR-D - week 1		-	-	-	-
CESD - week 2		-	-	-	-
PDR-D - week 2		-	-	-	-
CESD - week 3		-	-	-	-.23
PDR-D - week 3		-	-	-	-
CESD - week 4		-	-	-	-.25
PDR-D - week 4		-	-	-.21	-

Note. BDI = Beck Depression Inventory
 CESD = Center for Epidemiological Studies' Depression Scale
 PDR-D = Parent Daily Report - Depression Scale

Mother prescribes to the child with positive affect (a5c+) =
 future-oriented commands (house rules, impossible commands)
 with verbal and nonverbal positive affective expressions

Variables	a5c+:	week 1	week 2	week 3	week 4
BDI - intake		-	-	-	-
CESD - intake		-	-	-	-
CESD - week 1		-	-	-	-
PDR-D - week 1		-	.25	-	-
CESD - week 2		-	-	-	-
PDR-D - week 2		-	-	-	-
CESD - week 3		-	-	-	-
PDR-D - week 3		-	-	-	-
CESD - week 4		-	-	-	-
PDR-D - week 4		.33	-	.23	.45

Mother reasons/warns child with positive affect (a7c+) =
 provides rationale or warning qualifying maternal conduct
 with verbal and nonverbal positive affect

Variables	a7c+:	week 1	week 2	week 3	week 4
BDI - intake		-	-	-	-
CESD - intake		-	-	-	-
CESD - week 1		-	-	-	-
PDR-D - week 1		-	-	-	-
CESD - week 2		-	-	-	-
PDR-D - week 2		-	-	-	-
CESD - week 3		-	-	-	.21
PDR-D - week 3		-	-	-	-
CESD - week 4		-	-	-	-
PDR-D - week 4		-	-	-	-

Note. BDI = Beck Depression Inventory
 CESD = Center for Epidemiological Studies' Depression
 Scale
 PDR-D = Parent Daily Report - Depression Scale

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