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Toward a conceptual model of the relationships between women's orientations to mothering, post-partum mood and infant-mother interaction

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TOWARD A CONCEPTUAL MODEL OF THE RELATIONSHIPS BETWEEN
WOMEN'S ORIENTATIONS TO MOTHERING, POST-PARTUM MOOD
AND INFANT-MOTHER INTERACTION

Submitted by
Michelle Earle

Department of Psychology
University of Wollongong

A thesis submitted in partial fulfilment
of the requirements for the degree of
Doctor of Clinical Psychology

December 1999
Statement of Authorship

Except where reference is made in the text this thesis contains no material published elsewhere or extracted in whole or in part from a thesis by which I have qualified for or been awarded another degree or diploma.

No other person’s work has been used without due acknowledgment in the main text of this thesis.

This thesis has not been submitted for the award of any degree or diploma in any other tertiary institution.

All research procedures reported in this thesis were approved by the relevant Ethics Committee.

Date:

Signature:
Acknowledgments

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Especially to my supervisor Dr. Rachael M. Henry who provided reliably helpful supervision, encouragement and example, despite the tyranny of distance I imposed and other things she had to contend with.

To Judith for her faith

To Helga

And to the women, men and infants who shared their meaning-laden experiences.
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Record of contacts with J. Raphael-Leff

Record of contacts with H.M. Sharp
Abstract

This study adopted a developmental-transactional, psychodynamic model of women's psychological approaches to the childbirth transition to maternity, termed the maternal orientation model (Raphael-Leff, 1993), to conceptualise the course and concomitants of the transition. Raphael-Leff proposes three predominant approaches, Facilitator, Regulator and Reciprocator, each of which is characterised by unique constellations of anxieties, defenses and behaviours evident in pregnancy and the early post-partum, and each of which is associated with differential courses of transition, precipitants and timing of increased vulnerability to distress. In this study a number of hypotheses and exploratory questions were tested. Firstly, the content, discriminant and concurrent validity of one maternal orientation instrument, the Pregnancy Six to Nine Months Questionnaire (P6-9MQ, Raphael-Leff, 1983; Sharp, 1995), were examined. Secondly, the distribution of maternal orientation in an Australian community population was examined. Thirdly, some hypotheses and exploratory questions derived from the model regarding maternal post-partum minor psychiatric symptomatology, minor depressive symptomatology, depression diagnosis and infant-mother synchrony were examined. It was hypothesised that women with Regulator orientations would show more minor psychiatric symptomatology, depressive symptomatology, diagnoses of depression and lower infant-mother synchrony, than women with Facilitator orientations between 6 and 8 weeks post-partum. Maternal orientation was measured after 36 weeks in a community sample of 73 pregnant women attending ante-natal clinics at a major general hospital in Melbourne, Australia. At 6 weeks post-partum, minor psychiatric and depressive
symptomatology were measured, and depression diagnosis was assessed in those
recording clinically significant depressive symptoms. At 8 weeks, a subset of 10 women
provided infant-mother synchrony data. The P6-9MQ was found to have fair content
validity but poor discriminant and concurrent validity. The latter result was likely to
reflect the poor psychometric properties of the comparison instrument. Maternal
orientation was distributed bi-modally, with the dominant groups being the (Collapsed)
Facilitator and (Collapsed) Mixed Facilitator/Regulator groups. Because the groups were
not well discriminated, planned group comparisons were not made along dependant
variables. Instead, patterns of responding to the P6-9MQ by the clinical and non-clinical
groups in each dependant variable, were compared. The only variable, along which there
was some evidence of different patterns of responding to P6-9MQ items, was depressive
symptomatology. Issues such as the conceptualisation and measurement of maternal
orientation, the sample demographics and sample size proposed to be associated with null
results, are discussed.
CHAPTER 1 CHILDBIRTH TRANSITION TO MATERNITY

1.1 History of the study of the childbirth transition to maternity

During the early part of the century the childbirth transition to maternity was viewed as a period of ‘illness’ from which the woman had to recover, and expectations regarding post-childbirth functioning were relatively low. As a result the transition received relatively little attention among psychological and developmental theorists and researchers (Leifer, 1980). This situation was supported by the (context of) congruent societal, cultural and scientific paradigms of the time. The societies within which theory was being generated had a patriarchal basis (Bernay, 1986; Breen, 1975; Horney, 1967; 1973; Thompson, 1973; Tyson, 1982) and were influenced by evolutionary theory (Shaffer, 1977). The dominant theory of personality development was Freud’s early psychosexual theory. Though he subsequently revised this theory considerably, Freud initially conceptualised female development as a compensatory adaptation to the disappointment associated with not being male. Further, because hermeneutic methods of theory construction were widely accepted, little investigation of the validity of this conceptualisation had been made. By the middle of the century challenges to the patriarchal and phallocentric bias of theory regarding female development (Sayers, 1991) were being led from within the neo-Freudian schools of psychoanalysis by figures such as Horney and Klein (Sayers, 1991) and by the seminal work of Benedek (1959) and Bibring (1959). These challenges were later supported by others from the schools of psychoanalytic-feminism (Breen, 1975; Chodorow, 1989; Dinnerstein, 1976), feminism (Freiden, 1963; Millet, 1969) and anthropology (Mead & Wolfenstein, 1955). Preliminary
empirically driven research of infant and child development during the past two to three decades from the disciplines of biology, psychology, sociology and anthropology have begun to show that some of the assumptions regarding female development have not been supported (Notman, 1982; Seiden, 1976; 1978; Stoller, 1980). This counter movement has continued to grow during the past three to four decades (Ballou, 1976; Berne, 1988; Breen, 1975; Chodorow, 1989; Cohen, 1988; Cramer, 1993; Kestenberg, 1977; Kliot, 1988; Leifer, 1980; Nadelson, 1989; Notman, 1982; Notman & Nadelson, 1993; Offerman-Zuckerberg, 1980; Raphael-Leff, 1983; 1985, 1992; 1995; Schreurs, 1993; Stern, 1985; Turrini, 1980; Tyson, 1982) leading to a change of paradigm.

More recently the limitations of illness models in accounting for the developmental, psychological and social dimensions of the childbirth transition to maternity have been noted (Breen, 1975; Chodorow, 1989; Henry, 1996). Firstly, illness models reduce and medicalise a normal period of human development. Secondly, they do not acknowledge the full impact of psychological, social and cultural variables. Thirdly, the empirically-driven use of methodologies in which large scale group comparisons dominate, has some counterproductive sequelae. This practice often causes researchers to neglect subjective, phenomenological experiences and does not provide clues to the way in which large scale effects are mediated within the individual.

Today most theorists and researchers employ a transactional-developmental model, in which the childbirth transition is viewed as a ‘crisis’ in a woman’s lifecycle, the potential of which is to promote maturation in various domains of a woman’s life. Though many theorists agree that having children is not a necessary condition for this maturation (Breen, 1975; Robinson, 1989; Robinson & Stewart, 1989), acknowledgment
of one’s reproductive potential is generally regarded as a central feature of female gender identity (Benedek, 1959; Bernay, 1986; Breen, 1975; Jordon & Surrey, 1986; Nadelson, 1989; Notman, 1982; Notman & Nadelson, 1993; Raphael-Leff, 1992; 1995; Tyson, 1982). The developmental crisis of maternity is analogous to earlier crises such as adolescence and subsequent crises such as menopause (Ballou, 1976). Though maturation occurs across many domains and at varying levels of functioning this thesis will focus upon the intrapsychic maturation which is proposed to underpin maturation in interpersonal, familial, occupational, cultural and other domains of living. This will be done through the adoption of a psychodynamic perspective to the developmental transition.

In the psychodynamic, transactional-developmental model the childbirth transition to maternity is proposed to provide opportunities for developmentally indicated intrapsychic maturation, potentially leading to enhanced personality organisation and functioning, and capacity for new and more mature interpersonal relations. This inherently “aggressive and libidinal” (Seiden, 1978, p.91) task is achieved through mastery of stage-appropriate intrapsychic tasks, a creative process which, in the psychoanalytic model, implies a loosening of defences, partial disintegration of intrapsychic organisation, receptivity to regression, working through of core intrapsychic conflicts and reintegration. The intrapsychic work of the transition is proposed to begin in pregnancy parallel to the physiological changes of the woman’s body. Pregnancy serves as a ‘rehearsal’ for early motherhood, during which time these conflicts will be aroused again for further intrapsychic work (Ballou, 1978; Offerman-Zuckerberg, 1980; Raphael-Leff, 1983; 1985; Turrini, 1980).
1.2 Normal courses of childbirth transition

A number of clinically-derived conceptualisations of the childbirth transition have been offered (Ballou, 1976; Benedek, 1959; Berne, 1988; Cohen, 1988; Kestenberg, 1977; Mahler, Pine & Bergman, 1975; Offerman-Zuckerberg, 1980; Pines, 1972; Turrini, 1980) by psychodynamically-oriented theorists, all of which share certain central features regarding experiences of pregnancy, labour and birth. In line with the proposition that there are clear, direct associations between mental states during pregnancy and those of the post-partum, Raphael-Leff (1983; 1985; 1993) extends these conceptualisations, particularly the work of Margaret Mahler (Mahler et al, 1975) regarding separation-individuation, into early maternity. The common, core features of the transition as described by these psychodynamic theorists will be summarised here, along with the extensions proposed by Raphael-Leff.

The first trimester has been characterised psychoanalytically as heralding a change of functioning in the woman which reflects a regression to the oral phase of psychosexual development. Features of this regression include a move toward introspection, preoccupations with physical change and symptoms, labile mood, ambivalence regarding the changes ahead and heightened dependency needs. Because of the intangible nature of the unborn child, the woman generally enters a state of fusion with the infant in which she experiences and accepts him or her as an extension of herself. Raphael-Leff (1985; 1992; 1995) suggests that this state of mind will occur again early in the post-partum period, whereby the woman’s motives and self-interested desires are
often subjugated to those of the infant, whom she views unconsciously as an extension of self. She enters a state of empathic attunement in which she becomes focused upon the gratification of the infant’s needs. These concepts are reminiscent of other psychodynamic and attachment-related concepts such as affective attunement and intersubjectivity (Stern, 1985), maternal reverie (Bion, 1955), primary maternal preoccupation (Winnicott, 1949) and maternal sensitivity (Ainsworth, Blehar & Wall, 1978).

The second trimester has been characterised as reflecting an emergence from the oral to anal and genital stages, prompted by the quickening. Despite continuing introspection and dependency the woman may experience an enhanced sense of physical well being, pride in her appearance and a sense of accomplishment in the pregnancy. Anxiety may emerge, particularly around issues of separation from the foetus and physical damage to herself taking the form of regressive fantasies and magical thinking. The woman’s relationship with her mother and to a greater degree her partner is likely to become increasingly significant, with the latter providing both the nurturing and ego support required to promote her psychological work. The woman consciously and unconsciously reconfigures her sense of self, relationship with her mother and relationship with her partner. These efforts are in the service of developing a good maternal ‘object’ (internal representation of a maternal figure) within her object world, differentiating herself within the marital dyad, identifying with the maternal and feminine, and preparing for the incorporation of the infant into the nuclear and extended family. The increasing differentiation of self and unborn child provides opportunities for the woman to begin building a relationship with him or her, as an ‘other’. Raphael-Leff
suggests this state of mind is again achieved during the post-partum, particularly toward the end of the infant’s first year, when the woman begins to allow the environment to impinge upon the infant and begins recognising her own needs as an individual. These processes are akin to the psychodynamic concept of developmentally appropriate and graduated ‘de-adaptation’ as described by Winnicott (1949).

The third trimester has been characterised as reflecting further development toward adult modes of functioning and a longing to ‘meet’ the baby. This move is prompted by increased bodily discomfort and fatigue, anxiety and fantasy regarding physical damage to herself and the foetus during labour and excitement about the foetus within. The primacy of separation themes may generate fears of abandonment by partner and mother, upon whom she has relied for gratification of her dependency needs throughout the pregnancy. The woman is also likely to feel ambivalent about the practical changes the baby will bring to her life. At this stage her relationship with the foetus will be characterised by preparation for separation and a loss of closeness, followed by attachment after birth. Raphael-Leff (1985; 1992; 1995) suggests this situation occurs again in the post-partum around the infant’s second year of life whereby the infant’s increasing cognitive, language and locomotor abilities challenge the exclusive intimacy between mother and infant, and provide opportunities for enhanced separateness and interdependence to the woman and her infant. In attachment terms this period has been described as the time in which the complementary behavioural systems of attachment and exploration come into play, leading to the development of a goal directed partnership (Bowlby, 1969).
Raphael-Leff (1985, 1992; 1995) has attempted to synthesise this body of clinically derived theory into a conceptual model. She proposes the following phases of transition, physiological time frames and psychological tasks:

<table>
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<tr>
<th>Psychological Task</th>
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<tr>
<td>Pregnancy</td>
<td>discovery of pregnancy to quickening</td>
</tr>
<tr>
<td>- 1st trimester ‘belief in the pregnancy’</td>
<td></td>
</tr>
<tr>
<td>Post-partum</td>
<td>early 1st year</td>
</tr>
<tr>
<td><strong>Differentiation /Individuation</strong></td>
<td></td>
</tr>
<tr>
<td>Pregnancy</td>
<td>quickening to viability of foetus outside womb</td>
</tr>
<tr>
<td>- 2nd trimester ‘belief in the foetus’</td>
<td></td>
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<tr>
<td>Post-partum</td>
<td>end of 1st year</td>
</tr>
<tr>
<td><strong>Rapprochement</strong></td>
<td></td>
</tr>
<tr>
<td>Pregnancy</td>
<td>viability outside the womb to birth</td>
</tr>
<tr>
<td>- 3rd trimester ‘belief in the baby’</td>
<td></td>
</tr>
<tr>
<td>Post-partum</td>
<td>during 2nd year</td>
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</table>

These phases turn upon the following core intrapsychic conflicts:

a) self-other definition - how two entities can be contained within her bodily parameters;

b) object relations - how another object can be incorporated into her external and internal object world; and

c) self identity/representation - how former identity as child-wife-woman can be reconciled with new identity as procreative woman-mother.
Though these phases are core elements of female development during pregnancy and the post-partum, Raphael-Leff suggests that there will be much variability in individual courses of transition. This will occur because the way in which the core tasks of development are negotiated by a woman will be mediated by the constellation of internal, interpersonal and environmental factors surrounding her. Further, it is because this process is cyclic, that she proposes the way in which a woman negotiates the transition during pregnancy will be predictive of events in the post-partum.

1.3 Issues in the study of the childbirth transition

Though the literature is replete with case studies there have been relatively few attempts to apply empirical methods to the study of the childbirth transition to maternity in the individual. The following is a critical appraisal of those studies most relevant to the current work.

In applying traditional empirical methods to this body of clinically derived theory, a number of issues require consideration. Firstly, most of this theory was derived from experience with white, middle-class populations. Hence, the generalisability of results to other socio-demographic groups should be carefully considered. Secondly, to test predictions regarding the course of development over time, prospective studies must be employed. Without these the validity of results may be compromised by distortions inherent in retrospective or concurrent measurement of variables. Thirdly, consistent with the transactional-developmental and predominantly psychodynamic perspective underpinning this body of theory, independent and dependent variables should be derived from relevant theory and concepts rather than by empirical considerations. Fourthly, well
informed measurement of variables will include subjective and objective dimensions of experience. This will enable comparison of gross group-based differences and some elaboration of the way in which these are mediated within the individual.

1.4 Empirical studies of the transition

In a small and narrowly defined study Ballou (1976) examined the relation between women's object relations and adjustment to motherhood using a prospective, repeated measures design. Changed object relations were defined as an elaborated and better integrated sense of self and capacity to relate to others. Adjustment was defined as an acceptance of the maternal in self, and interdependence and mutuality with the infant. Ballou followed 12 self-selected white, middle-class women homogeneous in education, socioeconomic status and personality style through pregnancy into the third post-partum month. Empirical and phenomenological methods of measurement were used including objective instruments (semi-structured interviews) and projective instruments such as the Thematic Apperception Test (TAT; Murray & Morgon, 1935). Ballou hypothesised that changed and specifically more sophisticated object relations (predictive or independent variables) would be associated with better levels of adjustment in the post-partum (criterion or dependent variables). Data from within-subject contrasts and aggregated results were presented.

Irrespective of their initial attitudes most women showed a pattern of reconciliation with their mothers during pregnancy, in which mother came to be viewed increasingly as a good and giving figure. A parallel trend occurred with the women's
view of their own childhoods whereby irrespective of their initial view, most women viewed their childhoods as good by the end of the third trimester.

Most husbands were found to function as maternal and paternal objects for the women. The maternal function appeared to provide a source of gratification for women's emerging dependency needs and the paternal function a source of gratification of maturational needs associated with an emergence of adult modes of functioning in the woman.

Irrespective of their initial attitudes most women developed a sense of themselves as mothers during pregnancy, associated with feelings of competence and effectiveness. In a parallel manner the undifferentiated sense of the foetus which most women held early in pregnancy became a sense of an increasingly real and separate identity after the quickening.

Ballou interpreted these results as supporting the developmental and psychodynamic view of the transition. She suggested that they provided information about both the process and outcome of development. The processes interpreted as supported were greater resolution of oedipal conflicts, elaboration and integration of sense of self and object relations. These led to an acceptance of the maternal in self and to an interdependence and mutuality with the infant. Moreover, this stage-appropriate development appeared to occur through a regression to primitive, dependent states, reworking of intrapsychic conflicts and emergence to more sophisticated modes of functioning. The findings of this study elaborated the individual courses of adjustment associated with different views of self as mother and of relations with the baby. They also pointed to the value of examining the individual's psychological construction of her
experiences rather than to actual experiences, as indicators of adjustment. However, the small, self-selected sample and the absence of a non-pregnant control group made it difficult to generalise or to establish the validity of these results.

In another study, Leifer (1980) examined adjustment to motherhood from a developmental-transactional, psychodynamic and feminist perspective. She employed a prospective, repeated measures design with a view to exploring the experience of transition among women rather than testing specific hypotheses. Leifer recruited 19 primiparous white, middle class women and followed them closely throughout pregnancy to seven months post-partum. Only phenomenological methods were used to collect data through interview and follow-up questionnaire. Participants were classified into high, moderate or low functioning groups in the post-partum on the basis of an index of functioning calculated across multiple measures. Two types of data were presented including aggregated descriptions of sequential change during pregnancy and contrasts of high and low functioning groups.

At the commencement of the study most women expected to have a family and considered children an 'essential part' of living and marriage. They were motivated toward motherhood by personal growth or security/status needs and felt the most important factor in their psychological preparation for motherhood was believing their marriage was cohesive enough to accommodate the introduction of a third person. They regarded pregnancy as a psychological preparatory period for motherhood and held positive or ambivalent expectations about what was ahead.

During the first trimester most women developed an emotional investment in the pregnancy, facilitated by the cultivation of peer networks with other pregnant women and
by their increasing capacity to visualise themselves as mothers. They began to be preoccupied with self and experienced a greater need for nurturance. The women’s moods became more negative and high levels of anxiety were typically directed toward the unborn baby, including fears of miscarriage and deformity. Most were willing to discuss and explore these anxieties and reported heightened levels of wellbeing overall.

Predominant somatic symptoms during this period were nausea, vomiting, fatigue, loss of appetite and headaches. Most women viewed the unborn baby as a part of themselves, rather than as a separate entity.

During the second trimester most women experienced an increase in ambivalence, satisfaction with pregnant appearance and an elaborated vision of self-as-mother. Preoccupation with self increased and was accompanied by preoccupation with the unborn baby and sometimes with husband, in the context of a disengagement from other social activities. Dreams and fantasies regarding the unborn baby were elaborated, particularly after the quickening. Early feelings of wellbeing peaked, characterised by pride and satisfaction in the pregnancy. Most women reported an improvement in somatic symptoms, though the onset of leg cramps, backaches, swelling, problems with breathing, urination and later with weight, was noted. After the quickening the unborn baby was typically viewed as a separate entity, and was personified by the woman.

During the third trimester most women became frustrated at being treated as ‘ill’ by people around them and dissatisfied with their appearance. Preoccupation with self continued. Emotional lability peaked, with feelings being more easily evoked and less easily defended against leading to marked mood swings, irritability and susceptibility to stress. High levels of anxiety were typically directed toward the unborn baby, including
fears of deformity, and toward themselves: fears of bodily damage during labour, loss of sexual attractiveness or loss of marital partner. Reports of wellbeing diminished, leaving women impatient with the pregnancy and eager to give birth. The predominant somatic concern during this time was weight. Emotional bonds and a strong attachment to the unborn baby were typically reported, as expressed by external preparation for the baby such as building a nursery.

During the post-partum most women described their hospital admission as a transitional period, characterised by feelings of loss associated with giving birth. Most had been initially euphoric at the successful birth of the baby, often expressed through crying. By day three or four most began to experience bouts of intense dysphoria and to feel overwhelmed by the dependence and helplessness of the baby. Most felt depressed by their low physical stamina, irrespective of the level of somatic symptomatology they experienced at the time. More women reported high somatic symptomatology during the first two weeks postpartum than at any time during the pregnancy, most of which were related to the episiotomy. Though these symptoms improved by eight weeks post-partum most rated their health as below pre-pregnancy levels. Women experienced intense depressive periods during the first three months and these were still present in an attenuated form at seven months post-partum, accompanied by a preoccupation with the infant. Infant temperament and changed social status were factors associated with emotional adjustment, and social support, particularly from husband or mother, was a mediating factor. Gender roles within the marriage became progressively more differentiated along traditional lines.
Comparison of the groups on adjustment showed that women in the high psychological functioning group achieved a stable personality integration early in pregnancy, as evidenced by stable self and body image. The pregnancies of these women were planned and were motivated by the need to expand and enrich their already full lives. These women used active coping strategies throughout the pregnancy, such as seeking assistance, or involving their husbands in the pregnancy. They were less threatened by identity and body changes, showed few symptoms and felt proud of their bodies. These women made efforts to develop a relationship with the unborn baby as evidenced by the direction of anxiety toward the foetus, in the form of concern. They entered the labour well prepared and used active techniques throughout it. Notably these women developed relationships with their babies easily on the basis of the earlier attachment to the unborn baby. These women also breast fed over a longer period than those in the other groups.

Women in the moderate psychological functioning group achieved a less mature personality integration but showed some evidence of personality growth. They had most often been motivated toward motherhood by security needs, were more threatened by the changes they experienced and reacted more defensively. They experienced more somatic symptomatology and were more distressed by physiological changes. These women also developed less emotional investment in the unborn baby. They entered the labour less well prepared and used less active coping strategies throughout it. During the postpartum period most were not intensely involved with their babies and tended to wean by three months.
Women in the low psychological functioning group achieved poor personality integration characterised by unstable self image. In all cases the pregnancy was unplanned or was motivated by security needs. They were more easily threatened by challenges to identity and resorted to extreme coping strategies or defences such as denial or passivity. Anxiety was centred on the self, they experienced concerns about their capacity to be good mothers and negative feelings were directed toward the foetus. Self-esteem was noted to decrease. Most remained ill prepared for childbirth and were passive throughout labour. During the postpartum these women formed weak emotional bonds with their babies, were often depressed and anxious, and suffered a decrease in self esteem.

Leifer interpreted her results as supporting the developmental-transactional, psychodynamic but not necessarily the feminist view of the transition to motherhood. Firstly, her results suggested that pregnancy and the post-partum could be characterised by progression through dependence to interdependence, symbiosis to differentiation and an increasing sense of maternal self. During pregnancy somatic symptoms decreased and during the post-partum mood disturbance initially peaked then continued in an attenuated form. In addition post-partum adjustment appeared to be associated with level of personality integration achieved during pregnancy. Leifer’s results provided rich detail regarding the transitional process which was consistent with the investigator’s conceptualisations. Her results were also consistent with those of Ballou (1976) regarding the unique nature of the transition, and association between the woman’s psychological constructions of self, infant and infant-mother relationship during pregnancy, and subsequent adjustment. However, like the latter study, methodological problems such as
the small, socio-demographically biased sample, lack of a non-pregnant control group and absence of any objective measures mean that these results require replication in a more empirically robust design to establish their validity.

An earlier English study by Breen (1975) had gone some way toward addressing methodological problems such as these. Breen set out to test the hypothesis that adaptive processes in pregnancy would be associated with subsequent adjustment to motherhood from a developmental and psychodynamic perspective using a prospective, repeated measures design. She followed 50 primiparous, married, working or middle-class women and 22 matched non-pregnant controls throughout pregnancy and the first year post-partum. Post-partum adjustment (criterion or dependent variables) was operationalised as the obstetrician’s opinion of adjustment, maternal mood and relation with the baby. Objective-empirical and phenomenological methods of measurement were combined through the use of objective instruments (semi-structured interviews, repertory grids, rating scales, depression and baby questionnaire) and projective instruments (drawing completion tests, TAT Oedipal card). Because adjustment was conceptualised as a continuous variable, participants were classified into groups according to their level of adjustment leading to classifications of well, medium and ill adjusted groups. Breen presented results based upon contrasts between the two extreme groups.

Overall 55% of the sample were rated as having adjustment problems by their obstetrician; 33% self reported some depressive symptoms and 35% self reported some problems with the baby at 10 weeks post-partum. Further, 22% were classified into the well adjusted group, 42% into the medium adjusted group and 36% into the ill adjusted
group. Variables found to be associated with quality of adjustment were nominated as adaptive processes.

Women in the well adjusted group were found to identify with a good maternal figure more often than those in the ill adjusted group, either by viewing their mothers as good and identifying themselves as similar or by viewing their mothers as bad and themselves as dissimilar. In contrast, women in the ill adjusted group were found to either view their mothers as good and themselves as dissimilar or view their mothers as bad and themselves as similar.

Women in the well adjusted group also valued themselves as mothers and viewed themselves as dissimilar to their husbands more often than those in the ill adjusted group. Though women in the well adjusted group did not show acceptance of the pregnancy more often than those in the ill adjusted group as predicted, they showed a capacity to tolerate ambivalence around the pregnancy more often. In a similar way, though women in the well adjusted group did not show an increase in femininity more often than those in the ill adjusted group, results were confounded by stereotyped conceptualisations of femininity in which passivity featured. When femininity was conceptualised as creative and generative, women in the well adjusted group saw themselves as more feminine.

Overall, Breen interpreted her results as supporting the developmental-transactional, psychodynamic conceptualisation of adjustment to motherhood. Adjustment appeared to occur along a continuum. Notably, normal adjustment was characterised by responses ranging from a relative absence of signs of disturbance to the presence of some signs of disturbance. In contrast, problematic adjustment was characterised by pervasive signs of disturbance across multiple domains of the woman’s
functioning. Particular features of adaptation throughout pregnancy and the post-partum were associated with normal adjustment, namely achievement of identification with a good maternal figure, satisfaction and valuing of self in the mothering role, increased role differentiation within the marriage in preparation for the baby, tolerance of the ambivalence associated with mothering and a sense of active, creative femininity. These achievements generally represented substantial intrapsychic changes and are consistent with the investigator’s conceptualisations and the work of Ballou (1976) and Leifer (1980) regarding the individual nature of transition and its association with self-view, maternal post-partum mood and relationship with the infant. This study was well designed and conducted, particularly because the use of a non-pregnant control group enabled inferences to be drawn regarding the specificity of these processes to women making the childbirth transition. The most prominent drawbacks in it were a small and socio-demographically biased sample which limited generalisability.

A recent study by Greene, Snowdon and Stratham (1991) built upon the methodological rigour brought to the study of transition to maternity by Breen (1975). These investigators used a prospective, repeated measures design to investigate the social and psychological effects of pre-natal screening for unborn baby abnormality upon adjustment to maternity, particularly maternal post-partum mood. A community sample of 1272 childbearing women was used. The investigators collected information regarding socio-demographics, physical well-being, social support, maternal adjustment/attitudes using self report questionnaires; and about dysphoria using the Edinburgh Postnatal Depression Scale (EPNDS; Cox, Holden & Sargovsky, 1987), full scale with clinical cutoff of 12/13 post-natally and modified version with a cutoff of 14/15 ante-natally.
Assessments were made at first, second and third trimester and at six weeks post-partum. Participants’ scores on the EPNDS were used as the criterion of adjustment, with responses to self-report questionnaires used as the discriminants. Women were classified into four criterion groups: a non-depressed group (NDG), an ante-natal depressed group (ANDG), a post-natal depressed group (PNDG) and an ante- and post-natally depressed group (A&PNDG). Data were analysed according to overall incidence and prevalence rates of depression, and by comparing the classification groups along the discriminants over time.

Overall 80% of the sample consistently scored below the cutoffs for depression. Twelve percent scored above the ante-natal cutoff and 14% above the post-natal cutoff. Though the correlation between ante-natal and post-natal EPNDS (Cox et al., 1987) was significant only 42% of the ante-natal depressed group were also depressed at four weeks post-partum. In total 10% of the sample showed the same score, 55% showed a reduction and 35% showed an increase across ante-natal and post-partum assessments, and most of this variability was within three points.

In early pregnancy women in the NDG were more likely to describe their feelings about pregnancy positively, less likely to select the word ‘depressed’ to describe their feelings and less likely to report physical symptoms. This group were more likely to have long gestations.

In contrast, during early pregnancy the ANDG were less likely to feel positively regarding pregnancy than the NDG but more likely than the A&PNDG. This group were more likely to select the adjective ‘depressed’ to describe their feelings than the NDG but less than the A&PNDG; were more likely to describe physical symptoms than the NDG
and were most likely of the groups to have anxiety regarding the well-being of the unborn baby. In mid pregnancy they continued to show reduced levels of physical wellbeing though not to the extent of the A&PNDG. In late pregnancy they were more likely to select negative adjectives to describe their feelings, to report low physical well-being and high anxiety regarding the health of the unborn baby; and to reveal poor attitudes toward pregnancy, motherhood and to be critical of their ante-natal care. This group were more likely to have long gestations and in the early puerperium were less likely to have attempted or persisted with breast feeding than the NDG.

During early pregnancy the PNDG were less likely to feel positively regarding pregnancy than the NDG but more likely than the A&PNDG, more likely to report physical symptoms, and to have anxiety regarding the well-being of the unborn baby than the A&PNDG but less than the ANDG. In mid pregnancy this group continued to show reduced levels of physical wellbeing though not to the extent of the A&PNDG. By late pregnancy they showed some improvement in satisfaction with partner support, and in attitudes toward pregnancy and motherhood which were lower than the A&PNDG and ANDG but higher than the NDG. In the early puerperium this group were less likely to persist with breast feeding, were more likely to perceive their infants and life as difficult since the birth, and to report poor overall experiences of motherhood compared with the ANDG and NDG. This pattern supports the hypothesis of Raphael-Leff (1983; 1985; 1993) regarding the parallel between problems in early pregnancy and the early post-natal period.

During early pregnancy the A&PNDG were least likely of all the groups to describe positive feelings about being pregnant, were more likely to select the word
‘depressed’ to describe their feelings, more likely to report physical symptoms, and were
the least likely to report anxiety for the wellbeing of the unborn baby. By mid pregnancy
this group continued to report low levels of physical well-being, to select negative
adjectives to describe their feelings and to report dissatisfaction with partner support. In
late pregnancy they continued to show dissatisfaction with partner support, indeed
reporting a deterioration in their relationships with partner, to report low levels of
physical well-being, poor attitudes toward pregnancy and motherhood and were likely to
be critical of their ante-natal care. At the time of birth the A&PNDG were the most likely
of the groups to report low levels of control over self, contractions and staff. In the early
puerperium the A&PNDG were more likely to perceive their infants and life as difficult
since the birth, and to report poor overall experiences of motherhood. These results were
consistent with those of Ballou (1976), Leifer (1980) and Breen (1975) in a number of
ways. They indicted that there were differentiable courses of transition identifiable ante-
natally. They also indicated that the woman’s psychological construction of her
experience, was a valuable tool in conceptualising the course of her adjustment. Finally,
results suggested that post-partum maternal mood and infant-mother relations might be
useful indicies of adjustment, which warrant further study.

1.5 Summary

Taken together the results of these studies provide support for the existence of
unique and differentiable courses of transition to maternity. Women’s psychological
constructions of their ante-natal experiences appear valuable indicators of these, and may
be useful in attempting to predict the course of an individual’s adjustment in the post-
partum. There is some preliminary evidence of a parallel between early ante-natal
problems and early post-natal ones. Among the indexes of post-partum adjustment,
maternal post-partum mood and early infant-mother relations appear to warrant further
study.
CHAPTER 2 MATERNAL POST-PARTUM MOOD

2.1 History of the study of post-partum mood

Recognition of mood disturbances in the post-partum can be traced back in history to the 1800s, when Louis Marce offered an exposition on the subject. Consistent with the dominant illness or medical model of the time, these disturbances were conceptualised as clinical syndromes requiring treatment. However, in the context of a debate regarding the clinical specificity of mood disturbances in the post-partum, these disturbances received little systematic study and were excluded from psychiatric nosologies for the greater part of this century. It was not until recently that systematic study of mood disturbances of the post-partum has been made, prompted by the seminal work of Pitt (1968). Though there has been variability in the quality of this research, it has become steadily more rigorous. Today, some of these disturbances continue to be conceptualised from within an illness model, as clinical syndromes in the International Classification of Diseases, Version 10 (ICD-10; World Health Organisation, 1992) and the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; American Psychological Association, 1994). In both of these nosological systems some mood disturbances noted in the post-partum are classifiable, and can be discriminated in a limited way from other mood disturbances on the basis of post-partum onset specifiers.

Theorists and researchers have generally grouped these mood disturbances into three clusters a) post-natal blues or ‘maternity blues’ (PNB), b) post-natal psychoses (PNP) and c) post-natal depression (PND) (Hopkins, Marcus & Campbell, 1984; O’Hara & Zekoski, 1988; Stowe & Nemeroff, 1995). The first two clusters will be briefly
discussed in order to differentiate them from depressive syndromes. This will be followed by a more detailed discussion of PND, one of the dependent variables in this thesis. In the following discussion, ‘incidence’ refers to the number of new cases which have been diagnosed in a population within a given time period, and ‘prevalence’ refers to the total number of cases diagnosed in a population within a given time period.

2.2 Post-natal blues

Post-natal blues is a mild, self-limiting mood state which generally develops between three and five days (Boyce & Stubbs, 1994) but up to two weeks (Stowe & Nemeroff, 1995) after birth. The duration may be between a few hours and a few days (O’Hara & Zekoski, 1988). Symptoms generally include mood dysphoria and lability, anxiety, irritability, tearfulness, somatic symptoms and insomnia. Reviewers of the literature have estimated the incidence of PNB at between 50% and 80% of new mothers within the first two weeks post-partum (O’Hara & Zekoski, 1988; Stowe & Nemeroff, 1995). Prevalence has been estimated at up to 70% of childbearing populations (Boyce & Stubbs, 1994).

Given the high incidence and prevalence rates of PNB immediately after childbirth, this syndrome is believed to be a specific but normal feature of the post-partum. Both biological and psychological theories of aetiology have been offered. In the first of these, PNB has been hypothesised to be associated with hormone changes and the physical impact of the delivery upon the woman. In the second, PNB has been proposed to be associated with the psychological impact of giving birth, the reality of the changes
imposed upon the woman’s life by her infant and the beginnings of the attachment and bonding process.

Early studies of PNB employed small samples and relied heavily upon subjective reports of women’s experiences. However, some rigorous studies have been conducted during the past two decades, and results have supported the specificity of PNB. Kendell, McGuire, Connor and Cox (1981) used a prospective, repeated measures design to study post-birth mood in a community sample of 81 women. Mood symptoms were measured using Visual Analogue Scales (VAS; Cox, Conner, Henderson, McGuire & Kendell, 1983) daily for 21 days. Results showed that depression, tearfulness and lability were highest on day five. Women who subsequently became depressed were found to have higher depression and lability post-birth and a more acute peak of symptoms on day five than those who did not. Unfortunately the lack of a control group precluded inferences regarding the specificity of this effect.

In a study which addressed this methodological issue, Iles, Gath and Kennerley (1989) used a controlled, prospective design to investigate post-birth mood in a community based sample. Symptoms were measured using a self report PNB instrument for 10 days in post-partum and post-operative matched controls. Results showed that the post-birth group recorded acute symptoms on day four or five while symptoms of the post-operative group steadily declined from day two onward. These results supported those of Kendell et al (1981) regarding the pattern of symptoms among post-birth samples and showed that this pattern was specific to post-birth samples.

O’Hara, Zekoski, Philipps and Wright (1990) employed a controlled, prospective, repeated measures design to study PNB, PND and possible vulnerability factors in a
community sample of 179 women. In this study the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock & Erbaugh, 1961), VAS (Cox et al, 1983), Symptom Check List-90-R (SCL-90-R; Derogatis, 1983) and Schedule for Affective Disorders and Schizophrenia (SADS; Endicott & Spitzer, 1978) were used to measure depressive symptoms against the criteria of Pitt (1968). Self-report instruments were used to measure vulnerability factors. Results showed that the childbearing group (CBG) had four times the rate of mild dysphoria one week after childbirth than shown by the matched non-childbearing group (NCBG). Further, positive mood ratings for the CBG peaked on day two and then deteriorated until day eight when they began to improve, in comparison to the relative stability of mood in the NCBG. These results supported those of Kendell et al (1983) and Iles et al (1989) regarding pattern and specificity of mood symptoms in the post-partum.

Though there has been little study of the psychological variables postulated there has been some study of the relationship between hormonal changes and PNB. Reviewers of the literature (Harris, 1996; Stowe & Nemeroff, 1995) agree that there is some evidence for the latter aetiological theory. High ante-natal progesterone levels have been associated with PNB and progesterone is known to have anaesthetic, anxiolitic and hypnotic-like properties. When progesterone levels are high during pregnancy then fall abruptly after birth, the woman may experience symptoms of lability, dysphoria and irritability similar to those of a withdrawal syndrome, such as from benzodiazapines.

Some investigators (Kendell et al, 1981) and reviewers of the literature (Stowe & Nemeroff, 1995) suggest that an episode of PNB may increase a woman’s risk for depressive episodes during the first year post-partum; however, further study is required
to test this hypothesis. There is little evidence that PNB has long-term deleterious effects on the woman or infant (O'Hara et al, 1990).

2.3 Post-natal psychosis

Post-natal psychosis is a severe clinical syndrome characterised by confusion, indecisiveness, affective and psychotic symptoms which generally develops within three to four weeks after birth (Boyce & Stubbs, 1994; Kumar, 1994; Stowe & Nemeroff, 1995). Most such syndromes take the form of manic or depressive episodes with psychotic features which are consistent with a unipolar or bipolar mood disorder. However, anecdotal evidence in the literature suggests that the content of psychotic symptomatology is often associated with maternity. For example, a woman may experience delusional guilt regarding her capacity to mother or persecutory delusions that her infant hates her. For these reasons infanticidal thoughts may also be present.

Reviewers of the literature have estimated the incidence of PNP at between .1% and .2% of new mothers within the first four weeks post-partum (Boyce & Stubbs, 1994; Kumar, 1994; Stowe & Nemeroff, 1995). It has also been estimated that a woman is 16-20 times more likely to require an admission for a psychotic episode during the first three months post-partum, as at any period prior to conception (Kumar, 1994).

As in the case of PNB there has been limited systematic study of PNP, exacerbated by difficulties recruiting adequately sized samples. Despite this, the content of the psychotic phenomena, and the fact that women have a far higher likelihood of experiencing a psychotic episode warranting admission in the post-partum than at any time prior, have supported the view that PNP is a rare, clinical syndrome specific to the post-partum. Most theories of aetiology have been physiological and biological in nature.
The fact that the syndrome emerges soon after birth and has been found to be related to previous history of psychotic episodes or family history, provide some support for these aetiological theories. Conversely, the fact that primaparae have been found to be more likely to experience a PNP than multiparae (Kumar, 1994) suggests psychological factors may contribute.

Because of the partial or total loss of contact with reality PNP typically warrants admission to a specialist mother-infant psychiatry unit, both to contain and treat the distress of the woman and to reduce the risk to herself and her infant through neglect, distraction or infanticidal tendencies. Relapse rates have been estimated at between 30% and 50% (Dean, Williams & Brockington, 1989). Women planning further pregnancies are generally counselled regarding the need for prophylactic pharmacological treatment and immediate return to this after weaning (Boyce & Stubbs, 1994).

2.4 Post-natal depression

Post-natal depression has been defined as a depressive episode usually developing within six weeks but up to six months after childbearing (Boyce & Stubbs, 1994). It is generally characterised by fatigue, emotional lability, depressed mood and anxiety. Suicidal or infanticidal ideas may be present.

Despite the colloquial use of the term, the clinical specificity of PND continues to be debated. This debate is complicated by methodological problems in the research, particularly the lack of consistent definition and measurement which call into question reliability and validity of diagnoses; and by the use of uncontrolled designs which preclude inferences regarding the specificity of results to the post-partum.
It has been suggested that PND is not differentiable from depression occurring at other times. This view has been supported by the results of some empirical studies using standardised assessment procedures and diagnostic criteria such as Research Diagnostic Criteria (RDC; Spitzer, Endicott & Robbins, 1978) over a three to six month period. Many of these studies have found that PND is similar in presentation and incidence to minor and major depressive episodes (as defined by current nosological systems) occurring at other times (Affonso, Lovett, Paul & Sheptak, 1990; Cooper, Campbell, Day, Kennerley & Bond, 1988).

However, there is converging anecdotal and empirical evidence that PND may be differentiable both in clinical presentation and along other dimensions. Pitt (1968) was the first to propose that PND was 'atypical' on the basis of presentation, because of the prominence of neurotic and reverse vegetative features in his U.K. sample. Since then some reviewers of the literature have noted that the content of thoughts and foci of affective experiences in PND are often associated with maternity. For example, a woman may experience feelings of inadequacy in her mothering role and subjective strain in coping with mothering demands (Hopkins et al, 1984; Stowe & Nemeroff, 1995).

Further, there is evidence from some studies that PND can be differentiated from depression at other times. For example, when the interval of measurement is shortened to the month following birth, women are three times as likely to have an onset of depression as they are at other times (Cox, Murray & Chapman, 1993). A controlled study has shown that higher levels of depressive symptomatology are experienced by a childbearing group than a matched non-childbearing group (O’Hara et al, 1990). In addition, 50% of PND cases are index or first episodes, and it appears that women who have experienced
PND have a 40% chance of experiencing another episode following subsequent pregnancies (Stowe & Nemeroff, 1994). When samples of women experiencing index episodes of PND have been differentiated into those for whom the mood disturbance had arisen \textit{de novo} and those for whom it was seemingly a recurrence of previous mood disturbance, clear differences in course and recurrence have emerged (Cooper & Murray, 1995). Women in the index group were found to suffer shorter episodes and to be at increased risk of further PND after subsequent births but not of depressive episodes at other times. Women in the non-index group were found to have longer episodes and to be at risk of further depressive episodes, but not especially after subsequent births. Reviews of the transcultural literature suggest that when methodological variables are held constant, prevalence rates of PND are similar across nations (Howard, 1993; Kumar, 1994). Finally, some investigators have found infant-mother interventions to be efficacious forms of treatment with some PND though no more effective than other interventions (Cramer, 1993). Together this evidence points to the specificity of PND.

In concluding their review of the literature Stowe and Nemeroff (1995) suggested that the debate regarding clinical specificity would be informed by further study of symptoms which may act as discriminants, such as high levels of anxiety leading to sleep disturbance, lowered appetite and enjoyment of food, and diminished capacity to accept affection.

2.4.1 Nosology of post-natal depression

Post-natal depression attained a minor status as a diagnostic classification in the ICD-10 in 1992 and DSM-IV in 1994, through the introduction of specifiers which
enable a clinician to diagnose a depressive episode with post-partum onset if other criteria cannot be met. In DSM-IV the diagnostic criteria for PND are as follows:

Five or more of the following symptoms have been present during the same two week period, represent a change from previous functioning and cause clinically significant distress. At least one of the symptoms is either 1) depressed mood or 2) loss of interest or pleasure.

1) depressed mood most of the day, nearly every day as indicated by subjective report or observation by others
2) markedly diminished interest or pleasure in all or almost all activities most of the day, nearly every day
3) significant weight loss when not dieting or weight gain, or decrease or increase in appetite nearly every day
4) insomnia or hypersomnia nearly every day
5) psychomotor agitation or retardation nearly every day
6) fatigue or loss of energy nearly every day
7) feelings of worthlessness or excessive or inappropriate guilt nearly every day
8) diminished ability to think or concentrate, or indecisiveness, nearly every day
9) recurrent thoughts of death, recurrent suicidal ideation without specific plan or a suicide attempt or a specific plan for suicide with onset within 4 weeks post-partum.

(DSM-IV, p327)

However, there are both conceptual and empirical reasons for broadening research into depressive disturbances of the post-partum, beyond depression which can be classified under an illness model using conventional diagnostic criteria. Those who work from a developmental-transactional model emphasise that the transition to maternity is an
important developmental process for the woman, which requires significant changes in functioning along psychological, social and other dimensions. This process is likely to be associated with increased risk of various indices of diminished well-being for the woman, only one of which might be a diagnosable depressive episode. All forms of distress experienced throughout the process may reflect the quality of adjustment, and thereby warrant further study.

Certain empirical data seem to support this inclusive rather than exclusive view of depressive disturbances of the post-partum. Firstly, there is considerable evidence that many cases of major or minor PND only partially remit, leaving a residue of symptomatology which may go unacknowledged and untreated over extended periods (Murray, 1992). There is also evidence that many women suffer depressive syndromes which do not meet diagnostic criteria or become sufficiently disabling to provoke help-seeking, but which also continue unnoticed and untreated (Kumar, 1994; Murray, 1992). These issues will be discussed further in this thesis.

A vast literature on the incidence, prevalence, course, possible aetiology and correlates of clinical (diagnosable) and sub-clinical depression in the post-partum has accumulated during the past two decades. This literature is difficult to assimilate and interpret because of a number of common methodological problems (Romito, 1990). Firstly, definitions of depression across studies have varied markedly, ranging from arbitrary collections of subclinical symptoms to syndromes which meet the diagnostic criteria of ICD-10 or DSM-IV. This variability has made comparison of results difficult. Secondly, sampling has varied, such that samples have included women who have varied along potentially confounding variables without this being controlled for. Thirdly,
relatively few studies have employed control groups, thereby precluding researchers from
drawing inferences regarding the differentiation of depression in the post-partum from
depression at other times. Fourthly, there has been variability in study design, including
the use of retrospective and concurrent designs which may confound the validity of data
collected. Finally, methods of measurement of depression have varied widely, with some
studies employing instruments designed for non-post-partum populations, and others
relying upon only self-report or structured instruments. This is problematic for many
reasons. Higher levels of somatic and vegetative symptoms such as sleep disturbance and
fatigue are considered normal in post-partum populations in the context of the demands
do parenting. The use of instruments designed for non-post-partum populations in which
these symptoms are considered to be indicative of psychopathology then, will lead to
some invalid classification of depression. Additionally, self-report instruments will
necessarily measure clinical and sub-clinical depressions, but structured instruments will
only measure clinical episodes which meet diagnostic criteria.

Taking into account these methodological inconsistencies, a number of writers
have made thorough reviews of the post-partum depression literature, some of the content
of which is beyond the scope of this study (for reviews see Boyce & Stubbs, 1994;
An overview of the issues relevant to this study, namely measurement, prevalence, course
and vulnerability follows.
2.4.2 Measurement of post-natal depression

Early studies of depression in the post-partum relied upon subjective reports of symptoms among sufferers. Since the resurgence of systematic study of PND, methods of measurement have become steadily more empirical and rigorous. During the past two decades limitations upon resources and logistical problems have led to the development of a two stage measurement paradigm (Carothers & Murray, 1990). In this paradigm participants generally complete a self-report screening instrument (Stage 1) and those who score above a preset cutoff subsequently receive follow-up assessment (Stage 2) using an objective, standardised diagnostic instrument. Studies employing this measurement paradigm have yielded both subjective self report data and objective diagnostic data.

A range of self report and objective diagnostic instruments has been utilised in the study of depression in the post-partum. Self report instruments frequently cited in the literature include the General Health Questionnaire (GHQ; Goldberg, 1978) as a screening instrument for minor psychiatric morbidity including depression and anxiety, the Beck Depression Inventory (BDI; Beck et al, 1961) and Edinburgh Postnatal Depression Scale (EPNDS; Cox et al, 1987) as screening measures of depression.

Instruments utilised for the collection of diagnostic data have included structured interview schedules such as the Schedule for Affective Disorders and Schizophrenia (SADS; Endicott & Spitzer, 1978), Standardised Psychiatric Interview (CIS; Goldberg, Cooper, Eastwood, Kedward & Shepherd, 1970), Diagnostic Interview Schedule (DIS; Robins, Helzer, Ratcliffe & Seyfried, 1982) and the advanced version, the Composite International Diagnostic Interview (CIDI; World Health Organisation, 1989). Criteria
from ICD or Research Diagnostic Criteria (RDC; Spitzer et al, 1978) have been used in European studies because the former nosological system is accepted there; and criteria from DSM have generally been used in American, Australian and New Zealand studies for the same reason.

The efficacy of these instruments in studies of post-partum populations, however, has varied. Some investigators have noted that the selection of an instrument requires consideration of some important psychometric issues (Condon & Corkindale, 1997; Kitamura, Shima, Sugawara & Toda, 1994; Whiffen, 1990). Firstly, the construct of depression underlying the instrument should be consistent with the definition of depression being used. Secondly, the content of items should be relevant to the post-partum population, for whom symptoms such as somatic disturbances may not be an index of psychopathology. Thirdly, a continuous scale of measurement may be preferable to a dichotomous one, which reduces potentially valuable, descriptive data. Fourthly, because of the natural variation in symptomatology across the ante-natal and post-partum periods, the instrument should demonstrate adequate psychometric properties for the time frame of the study. These methodological issues have been borne out in a number of comparative studies.

The importance of employing instruments designed to measure depression in the post-partum was shown in a prospective, repeated measures design by Condon and Corkindale (1997), in which the validity of three self report depression instruments was compared in a community sample of 200 new mothers. The instruments included the depression subscale of the Hospital Anxiety Depression Scale (HADS; Zigmond & Snaith, 1983) with a cutoff of 11, Zung Self-Rating Depression Scale (ZSRDS; Zung,
1965) with a cutoff of 60, depression subscale of the Profile of Mood States (POMS; McNair, Loor & Droppleman, 1981) and the EPNDS (Cox et al, 1987) with a cutoff of 13. Assessments were made at four weeks, four months and eight months post-partum. At each assessment point, data from the 25 highest scoring women were compared. There were poor levels of agreement regarding the 25 most depressed women, particularly at the four week post-partum assessment. This was repeated when the 35 most depressed women were studied. The investigators attributed this variation to differing item content, wording of items and differing underlying constructs across the instruments.

Of the self report instruments cited in the literature as measures of minor psychiatric morbidity including anxiety, social malaise and depression in childbearing populations, the GHQ appears to be most prevalent. A number of studies have supported this usage.

In a prospective repeated measures design Japanese investigators Kitamura et al (1994) studied the efficacy of the GHQ-30 as a measure of minor psychiatric morbidity and the ZSRDS (Zung, 1965) as a measure of depression in a community sample of 120 childbearing women. Assessments were made in early pregnancy, around 34 weeks antenatally, five days and at four weeks post-partum. Scores on these instruments were compared against the criterion of the SADS (Endicott & Spitzer, 1978) and RDC (Spitzer, et al, 1978). The GHQ-30 and ZSRDS showed high sensitivity in identifying minor psychiatric morbidity and depressive disorder respectively, in early pregnancy and at one month post-partum but not at 34 weeks or five days post-partum. The investigators hypothesised that this variation may have been associated with social desirability effects or with the clinical differentiation of depressive syndromes across the ante-natal and post-
natal period, namely that depressions in the first trimester and at one month post-partum might differ from those of the third trimester and immediately following childbirth.

The validity of the GHQ-30 in post-partum populations was supported in a study by Nott and Cutts (1982) of a cross sectional community sample of 212 new mothers in the U.K. These investigators administered the GHQ-30 with a cutoff of 6/7 and compared scores with those from a clinical interview schedule as a criterion. A single assessment was made at between eight and fourteen weeks. Because items three and five of the GHQ-30 appeared to measure somatic and lifestyle-related symptoms which did not discriminate, these were removed from the analysis. The modified GHQ (GHQ-28) showed a high level of sensitivity to depression and good discrimination of the severity of psychiatric morbidity, as reflected by a high correlation with the CIS (Goldberg et al, 1970). The use of this modified version as a measure of minor psychiatric morbidity has since been supported by another investigator (Sharp, 1995). Sharp found a prevalence rate of 21.1% for minor psychiatric symptomatology in a primiparous, community-based U.K. sample at six weeks post-partum, using a clinical cutoff of 7.

Of the self report instruments used to measure depression in post-partum populations, the two most commonly cited in the literature are the BDI (Beck et al, 1961) and EPNDS (Cox et al, 1987) with the latter appearing to predominate. As shown by the following studies, there is considerable empirical evidence to show that the EPNDS is a valid measure of depression in these populations and is preferable to the BDI.

Harris, Huckle, Thomas, Johns and Fung (1989) compared the efficacy of the BDI and EPNDS in identifying PND in a clinical sample of 147 new mothers at between six and eight weeks post-partum. The BDI with a cutoff of 11 or more and the EPNDS with a
cutoff of 13 or more were administered to the women. Scores on these instruments were compared against the criterion of a psychiatric assessment using DSM-III criteria for major depression. The psychometric properties of the BDI were found to be inferior to those of the EPNDS. The former showed a sensitivity of 68% and specificity of 88%, and the latter showed a sensitivity of 95% and a specificity of 93%. The investigators concluded that the BDI was unsuitable for use with post-partum populations and the EPNDS was preferable. This poor sensitivity of the BDI has also been supported in studies by Whiffen (1988b) and Gotlib, Whiffen, Mount, Milne and Cordy (1989). Consistent with these findings many other investigators have found evidence of the validity of the EPNDS.

Using a prospective, repeated measures design Cox et al (1987) investigated the validity of the EPNDS using a clinical sample of 84 new mothers and a community sample of 12 new mothers. Scores on the EPNDS with a cutoff of 12/13 were compared with those of the CIS (Goldberg et al, 1970) and RDC (Spitzer et al, 1978). Assessment of the sample as a whole was made at six weeks and of a subset at 11 weeks post-partum. At six weeks the sensitivity of the EPNDS was estimated to be 86%, specificity to be 78% and the positive predictive value to be 73%. Split half reliability was estimated to be .88 and the standardised alpha co-efficient to be .87. Women who met RDC for depression at six and eleven weeks showed no significant difference in EPNDS across that time. Women who met criteria at six weeks but not at eleven weeks showed a significant reduction in EPNDS. These results suggested the instrument has satisfactory validity, split half reliability, and was sensitive to changes in depression and was appropriate for administration in the community as an initial screening device.
Similar psychometric data from the EPNDS were obtained in a much larger prospective study of 702 primiparous women from the U.K. by Carothers and Murray (1990). At six weeks the EPNDS with a cutoff of 13 or more was administered and those who scored above the cutoff were administered the CIS (Goldberg et al., 1970). A clinical cutoff of 12.5 yielded a specificity of 95.7%, sensitivity to minor or major depression of 67.7% and a positive predictive value for minor and major depression of 66.7%. These investigators also found that the EPNDS helped predict severity of depression, with high scores more likely to co-exist with a diagnosable major depression. The EPNDS has been subsequently used successfully in other U.K. studies of depression in the post-partum (Greene et al., 1991a; Sharp, 1995). Though the EPNDS has featured less often than the BDI (Beck et al., 1961) in U.S. based studies, this may be partly due to the fact the latter instrument was developed in the U.S., where more extensive empirical and clinical data relating to its use has been accumulated.

The validity of the EPNDS in local settings has also been supported by an Australian study of the utility of the EPNDS by Boyce, Stubbs and Todd (1993). These investigators administered the instrument with a cutoff of 12.5, along with the GHQ-30 and Diagnostic Interview Schedule (DIS; Robins, Helzer, Cottler & Goldring, 1989) against criteria for major depression in the DSM-III, to a mixed community and clinical sample of 103 women at 12 weeks post-partum. The sensitivity of the EPNDS was found to be 100%, specificity was 95.7% and positive predictive value 69.2%. The EPNDS was also found to be highly correlated with the GHQ-30, suggesting much overlap in the constructs underlying the instruments. Comparable results have been obtained in another Australasian study of 206 European and Maori women in New Zealand, using the same
cutoff (Webster, Thompson, Mitchell & Werry, 1994). Recently, detailed instructions for
the use of the EPNDS have been published (Cox & Holden, 1994).

Among the methods used to collect data for diagnostic classification have been
standardised psychiatric or diagnostic interviews such as the SADS (Endicott & Spitzer,
The primary advantages of these methods are the high levels of reliability secured by the
systematic and standardised nature of the resulting diagnosis; and the diagnostic outcome
which conforms to the criteria of an accepted nosological system. However, there are a
number of disadvantages. These instruments are generally time consuming to administer
and score, often requiring an hour or more per person. They tend to be rigid and
inflexible, and overlook valuable information such as historical and observational data
which is routinely used in the diagnostic process within a clinical setting (Hiller, Zaudig
& Mombour, 1990; Wittchen, Semler & von Zerssen, 1985). Further, specificity and
sensitivity may not be markedly improved through the use of such instruments. A number
of controlled studies in which standardised diagnostic interviews such as the DIS and
CIDI have been administered concurrently with clinical interviews using diagnostic
checklists for DSM, have shown high levels of diagnostic concordance for depressive
disorders (Janca, Robins, Bucholz, Early & Shayka, 1992; Wittchen, Semler & von
Zerssen, 1985).

Requirements of parsimony, flexibility and validity of diagnosis may be partially
addressed through the use of a diagnostic checklist. One such instrument is the Munich
Diagnostic Checklist (MDCL; Hiller et al, 1990). This diagnostic checklist was adapted
from DSM-III-R by investigators with considerable research experience regarding the
comparative psychometric properties of structured clinical interviews and diagnostic checklists. The MDCL is an objective, systematic method of assessing and evaluating diagnostic hypotheses in clinical and other settings. It differs from a structured interview in that the clinician can draw upon direct observation of the person, file and historical information; and can be flexible in the foci and sequence of probing without compromising validity. There has been little work done to test the efficacy of this diagnostic checklist. However, some preliminary investigation of the reliability has been published.

In a preliminary evaluation of the reliability of the MDCL, Hiller et al (1990) used a repeated measures design to administer the non-psychotic and non-organic schedules of the MDCL to a clinical sample of 60 adult outpatients. Assessment was made on two occasions with between one and four days intervening. Test-retest reliability of the diagnoses was found to be high, with overall agreement at between 90% and 95%. The authors suggested that these results provided initial support for the use of the MDCL in clinical settings, which required further study.

Given logistical and resource limitations in research, estimates of the prevalence of subclinical depressive symptoms in post-partum populations and the importance of differentiating such syndromes from clinical caseness, both self-report and standardised diagnostic procedures were used in this study.

2.4.3 Incidence and prevalence of post-natal depression

There have been many attempts to study the incidence and prevalence rates of depression in the post-partum. Incidence refers to the number of new cases diagnosed
over a given period of time. In large community studies incidence rates have generally been based upon the use of full psychiatric assessments in a subset of the sample, and percentages of cases versus non-cases is then generalised to the sample as a whole (Carothers & Murray, 1990). Prevalence refers to the number of diagnosed cases existing in a population at any given time of measurement.

Parallel to the debate regarding clinical specificity is the debate regarding the differentiation of incidence and prevalence. Some investigators suggest it is critical to differentiate these, because only depression with a post-partum onset can be classified as PND within ICD-10 and DSM-IV. Failure to adhere to the post-partum onset criterion would cause estimates of prevalence to be contaminated by depressions which had an ante-natal onset (Sharp, 1995). This adherence to rigid diagnostic criteria is consistent with predominantly biological or illness models of aetiology, in which depression is viewed, for example, as a response to hormonal changes experienced after birth.

However, this approach can be questioned on a number of counts. Firstly, it discounts the developmental continuum of pregnancy-to-maternity by focusing attention upon the post-partum phase of the process, and by imposing an artificial division between ante-natal and post-partum phases. Secondly, it does not recognise that pregnancy, as the developmental precursor to maternity, is also a time of increased risk of diminished wellbeing to women. Thirdly, it does not acknowledge that depression develops and is maintained over time, and that there may be early warning signs of a post-partum depression during the ante-natal period. Fourthly, it minimises forms of depression which do not meet conventional diagnostic criteria.
Though ante-natal and post-partum onset depressions may vary in theoretically meaningful ways, they can also be conceptualised as having significant overlap, by virtue of being elements in a broader transitional process. Unless a longitudinal design is used in which depressive symptomatology can be continually assessed throughout pregnancy and well into the post-partum, it may be artifactual to rigidly discriminate ante-natal from post-natal onset depressions, causing results to be skewed according to variables such as the time frame of measurement. Studies which have examined both incidence and prevalence show some support for the proposition that ante-natal and post-natal onset depressions are differentiable but associated phenomena, making rigid onset criteria somewhat redundant.

O’Hara (1986) used a prospective repeated measures design to study the association between social support, life events, ante-natal and post-natal depression in a community sample of 99 women. Depression was measured using the SADS (Endicott & Spitzer, 1978) against RDC (Spitzer et al, 1978); life events and social support were measured using self and other report instruments. Measurement was made during pregnancy and at nine weeks post-partum. The prevalence of depressions in the ante-natal and post-natal periods were similar with 9% of the sample found to have an ante-natal depression (six major and three minor), and 12% found to have a post-natal depression (eight major & four minor). A considerable minority of women were depressed at both ante-natal and post-natal periods (2/9 or 23%).

Similar results were obtained in a retrospective, 12-18 month follow-up of a subset of a community-based sample of 790 Australian multiparous women by Astbury, Brown, Lumley and Small (1994). The investigators found that though approximately
20% of the original case group dated the onset of their depressions to the ante-natal period, with 50% reporting they had first begun to feel depressed within three months of giving birth, a further 30% reported a later onset. Though the retrospective nature of these reports may have distorted reports of time of onset, most women in the case group were not clinically depressed at the time of reporting. This rules out the possibility that a current depression was colouring retrospective accounts.

Results regarding the association between ante-natal and post-natal onset depression were supported and extended by those of Gotlib et al (1989). These investigators employed a prospective, repeated measures design to examine prevalence rates and demographic characteristics in a cross sectional sample of 295 childbearing women. The BDI (Beck et al, 1961) with a cutoff of 10 was used to screen for depression, and the SADS (Endicott & Spitzer, 1978) was administered to all those scoring above the cutoff to establish caseness. Assessments commenced in the second trimester and continued until four weeks post-partum. Like O’Hara (1986) the investigators found comparable prevalence rates of diagnosable depression in the ante-natal and post-natal periods (10.2% and 6.8% respectively), and that a large minority (10/30 or 33%) of women diagnosed with ante-natal depression were also diagnosed with depression in the post-partum. Closer examination of the data showed that different demographic variables were associated with ante-natal and post-natal onset depression. Ante-natal depression was associated with age, education, number of children and occupation. Post-natal onset was not related to any of these variables excepting occupation. Although the investigators acknowledged that ante-natal onset depression showed some conceptual distinction from post-natal onset depression, they concluded that there was an important association
between them. It is possible that this association can be conceptualised in developmental terms, as reflecting the onset, course and quality of depressive reactions associated with pregnancy, birth and bonding, as they evolve over time.

Gotlib, Whiffen, Wallace and Mount (1991) used a prospective, repeated measures design to study a community sample of 730 women, in order to examine variables contributing to recovery from ante-natal depression and onset of post-natal depression. Vulnerability and protective factors measured included marital distress, dysfunctional cognitions, quality of parental relationships, perceived stress and coping style using self-report instruments. Clinical depression was measured using the BDI and those scoring above the cutoff were administered the SADS (Endicott & Spitzer, 1978). Assessments were made at 23 weeks ante-natally, 10 days post-natally and four and a half weeks postnatally. Prevalence of ante-natal and post-natal depressions in this study differed markedly, at 75/730 (11%) and 32/655 (20%) respectively, and this was difficult to account for. However, as in the studies of O’Hara (1986) and Gotlib et al (1989) a considerable minority (21/75 or 28%) of women diagnosed with depression ante-natally were also diagnosed with depression in the post-partum. Multiple regression showed that ante-natal levels of depressive symptomatology, maternal and paternal caring had some predictive power over post-natal depression, but that this was low, accounting for only 12.3% of the variance.

Given the association between ante-natal and post-natal onset depression it may be artifactual and invalid to strictly adhere to the post-partum onset criteria of PND, unless a longitudinal design is used in which onset and course of depressive symptomatology can be rigorously and meaningfully assessed from conception to well
into the post-partum. Hence, because this study set out to investigate severity of depression rather than type of depression or diagnostic classifications, timing of onset or incidence was not measured. Instead, in this study, depression was measured in the post-partum, yielding prevalence estimates and enabling some discrimination on the basis of severity.

Overall, estimates of the prevalence of depression in the post-partum have been relatively consistent with the above studies. Carothers and Murray (1990) used a prospective design to study the prevalence of depression in the post-partum in a community sample of 702 primiparous women from the U.K. The EPNDS (Cox et al, 1987) was used as the screening instrument with a cutoff of 13, then an adjusted version of the SPI (Goldberg et al, 1970) was administered to all those scoring 13 or above. On the basis of results the investigators estimated the prevalence when using an EPNDS cutoff 10/11 at six weeks to be 12.6% and with a cutoff of 13/14 to be 16.3%. These estimates were supported by a subsequent study of prevalence by Cooper, Murray, Hooper and West (1996) using a prospective design and a very large (5,124) community sample from Britain. The EPNDS was again used as the measure of PND. Results showed that at six weeks post-partum a cutoff of nine yielded a depression rate of 15.3%.

This estimate was supported in the retrospective study of 799 community-based, multiparous, Australian women at between eight and nine months by Astbury et al (1994). The study set out to examine the role of particular vulnerability and stressor variables as predictors of PND. In this study post-natal depression was measured using the EPNDS (Cox et al, 1987) with a clinical cutoff of 13 only. The prevalence of scores
above the cutoff was 15.4%. Though these estimated rates are consistent with those of Carothers and Murray (1990) the retrospective nature of the data cast doubt over results.

In a large study of prevalence and vulnerability, Warner, Appleby, Whitton and Faragher (1996) used a prospective design and concurrent measurement of independent and dependent variables in a very large multiparous (2375) community sample from the U.K. Depression was measured using the EPNDS (Cox et al, 1987). Results showed that a cutoff of 13 or more at between six and eight weeks yielded a prevalence of 11.8%. Unfortunately, the self selected sample were noted to have higher than average levels of obstetric and neonatal complications, making it difficult to generalise results.

In Australian studies utilising prospective, repeated measures designs with community samples prevalence rates based upon the EPNDS (Cox, et al, 1987) with a cutoff of 13 or above have been estimated to be 9% and 10% at six weeks and six months postpartum (Stamp & Growther, 1993) and 14% at four months (Dennerstein, Lehert & Riphagen, 1989). Similar results have been found in another Australasian study by Webster et al (1994) who employed a prospective, repeated measures design to study prevalence in a community sample of 206 multiparous New Zealand women. PND was measured using the EPNDS at four weeks and clinical interview of a random sample against DSM-III criteria for major depression at between eight and ten weeks. The prevalence of depression was estimated to be 21.5% with a cutoff of 9/10 and 7.8% with a cutoff of 12/13 on the EPNDS. Though the latter estimate was somewhat lower than cited in studies of white, middle-class samples it may be related to the ethnicity and high risk status of the sample. As had been found in other studies a strong (100%) association was found between EPNDS score of 13 or above and diagnosis of depression.
When interview and diagnostic criteria have been used results have also been relatively consistent. The study of O'Hara (1986) in which the SADS (Endicott & Spitzer, 1978) was used to measure clinical depression yielded prevalence estimates of 12% at nine weeks post partum and this has been supported by Whiffen (1988a) who prospectively studied a community sample of 115 primiparous women, using the SADS as a measure of clinical depression. At five weeks post-partum the prevalence of diagnosable depression was estimated to be 16.5% (6.1% major depression and 10.4% minor depression).

Nott (1987) used a prospective design to study a cross sectional multiparous community sample of 200 women in order to investigate incidence and prevalence rates. The GHQ-30 and semi-structured psychiatric interview were administered on multiple occasions between three and fifteen months post-partum. Clinical caseness was based upon the semi-structured interview data. Prevalence rates of diagnosable depression were estimated to be 18.5% at three months, 28% at nine months and 31% at fifteen months. When women who had experienced no psychiatric contact in their lifetimes were separated out and examined, an overall incidence (new cases) was estimated to be 13% at three months, 18% at nine months and 9.5% at fifteen months. This study provided some evidence that the peak onset of depression in the post-partum might be between three and nine months, a time frame much later than that covered by many studies. Further, given the rigid criteria used to differentiate new cases, incidence estimates were likely to be underestimates. Though the absence of a control group precluded inferences regarding the specificity of depression in the post-partum, these results warranted further investigation using more rigorous methods.
One such study has been the controlled prospective, cross sectional study of a community sample of 182 women by O'Hara et al (1990). In this study participants nominated five non-childbearing friends as possible controls, one of whom was selected by the investigators according to matching criteria. Clinical depression was measured using the BDI (Beck et al, 1961), the depression subscale of the Symptom Check List - 90-R (SCL-90-R, Derogatis, 1983) and the SADS (Endicott & Spitzer, 1978) at three, six and nine weeks post-partum. Prevalence rates as assessed by the BDI and SCL-90-R in the childbearing group (CBG) were estimated to be 10.4% across three, six and nine weeks post-partum. The CBG showed higher prevalence rates of minor and major depression than the non-childbearing group (NCBG) but these did not reach significance. In addition the CBG reported significantly poorer marital adjustment from the second trimester onward, had a higher rate (four times) of mild dysphoria one week after delivery and reported significantly poorer social adjustment at three and six weeks post-partum than the NCBG. The investigators concluded that these results supported the theory that late pregnancy and the puerperium were periods of increased psychological distress and maladjustment for women. In a critique of this study Whiffen (1992) has pointed out that the sample size may not have provided sufficient statistical power to enable significant differences in prevalence between the groups to be detected. This study provided limited evidence that the childbearing might place women at higher risk of depression than non-childbearing. Further, results suggested that some symptomatic indicators of depression in the post-partum might be present during pregnancy. However, because these results were non-significant the time frame of the study did not cover the peak incidence period.
found by Nott (1987) and results of the control group may have been confounded by social referencing effects, they require replication.

Another controlled study was made by Campbell, Cohn, Flanagan, Popper and Meyers (1992). This group investigated prevalence and course of clinical depression in a very large multiparous community sample of women and a matched control group of women drawn from the same sampling population. Interview methods were used against RDC to measure depression in the post-partum at two, four, six, nine, twelve, eighteen and twenty-four months post-partum. At two months 70/1000 (7%) were diagnosed with depression, at four months 45% of these continued to meet diagnostic criteria, at six months the figure was 24% at twelve, eighteen and twenty-four months the relevant figures were 12%, 17% and 17% respectively. Only a minority of the later figures reflected relapse. These results supported those of O’Hara (1986), Phillips and O’Hara (1991) and Nott (1987). The investigators noted that in addition to the relatively high rates of continuing diagnosable depression, around 30% of those followed-up showed subclinical depressive symptoms at each assessment. On the basis of their results they suggested that clinical depression typically remitted within six months of childbirth, but appeared to be chronic in some cases. In addition, the prevalence of subclinical symptoms in the previously depressed group suggested that even when the diagnosable depression remitted, many women continued to be plagued by distressing and disabling symptoms.

A meta analysis by O’Hara and Swain (1996) of 59 independent studies examining prevalence showed an overall prevalence rate of 13%, with 14% when self report measures and 12% when interview methods were used. The variables which contributed most to variability in estimates were the instrument used and the time period
of measurement, which together accounted for 25% of the variance in estimates. Specifically, there was significant variability among estimates based upon self-report instruments but not interview methods, and estimates based upon a wider window generally reported higher prevalence rates than studies employing narrower ones. These results provided further support for the results of many independent studies such that self-report instruments were likely to reflect clinical and sub-clinical depression while interview methods were likely to represent clinical depression alone; and that smaller time samples were likely to underestimate or skew estimates of prevalence.

2.4.4 Course of post-natal depression

There has been relatively less study of the clinical course of depression in the post-partum, a task made difficult by the labour and resource demands of study over an extended period of time. Of those studies which have attempted to examine course, one of two designs have predominated: either a planned longitudinal design or an ad hoc follow-up of a previously recruited sample.

In the prospective, repeated measures design of multiparous women by O’Hara (1986), depression as diagnosed by the SADS (Endicott & Spitzer, 1961) at nine weeks was found to have an average duration of three and a third weeks and a range of between one and six weeks. However, the short time frame used for measurement in this study, may have skewed results leading to overestimates of recovery. This possibility received some support from a four and a half year follow-up of 70 women from this study by Philipps and O’Hara (1991). In contrast to the earlier favourable findings regarding course, they found that 80% of the women who had originally experienced a depression
of the post-partum subsequently experienced a depression in the four and a half year follow-up period, as compared to 42% of the women who had not. Depression symptom levels were found to be relatively stable over time, as were levels of maternal and marital adjustment. Further, the median time between delivery and subsequent depression in women who had experienced a depression of the post-partum was 132 weeks and in those who had not it was 264 weeks. These results suggested that women who experienced a depression post-partum were at increased risk of both further depressions and of depressions within a shorter timeframe than those who had not, providing some support for the specificity theory. Given the lack of finer discrimination among the case group particularly in terms of depression history, and the absence of an independent control group, these inferences were tentative only and required more rigorous study.

A study which went some way toward addressing these methodological issues was a prospective, longitudinal study of multiparous women by Nott (1987). In this study the case group were discriminated along the dimensions of psychiatric history and timing of onset, and a greater timeframe for follow-up was planned (three, nine and fifteen months) than in the O’Hara study. Nott found that the symptom profile reported at three months held at fifteen month assessment. Further, of the women who had an onset depression within three months (as diagnosed by semi-structured interview) and had no history of psychiatric contact, 50% continued to be diagnosable cases at 12 months. The relatively large time lapses between measurement made it difficult to differentiate a continuing depressive episode from an episode which had resolved then relapsed.

Small, Brown, Lumley and Astbury (1994) combined a prospective and retrospective design when they made an ad hoc follow-up of a community sample they
had studied at between eight and nine months. The investigators selected a representative subset of the original sample and followed this group up at between 12 and 18 months in order to investigate the course and women’s subjective experiences of post-natal depression. The investigators used the EPNDS (Cox et al, 1987) and semi-structured interview to assess depression in 45 cases and 45 controls. Caseness was classified by an original EPNDS score of 13 or more and controls were classified by an original EPNDS score of eight or less. Almost half of the original case group reported that they had first begun to feel depressed within three months of giving birth, with around 30% reporting a later onset. Though there were no differences in time of onset between case and control group, significantly more of the original case group continued to score above the EPNDS cutoff at between 12 and 18 months than controls. This result supported those of O’Hara (1986) regarding depression in the post-partum increasing the risk of subsequent depressions. Further, as in the study by Nott (1987) the case group were more likely to have experienced a depression for nine weeks or longer than controls, and significantly more of the case group (30%) had been depressed for a year or more than controls. Of those women in the case group who had seen a health professional for initial follow-up, no more were depression free at 12-18 months than those who had not sought follow-up. Further, those in the case group who had seen a psychiatrist or psychologist were more likely to be depressed at 12-18 months follow up. Interestingly women who had sought help were more likely to report believing that depression was due to hormones and those who had not were more likely to say that the illness or death of a loved one had been implicated. The unexpected finding regarding responsiveness of depression in the post-partum to treatment may reflect a lack of psychological mindedness among those seeking
help, leading to limited usefulness of psychological intervention. Of all those who admitted feeling depressed at some time since the birth, 33% did not agree with the label post-natal depression. Results of this study went some way to differentiating issues around the duration of a post-natal depression, by suggesting that it typically improved soon after onset but that in a significant minority (30%) it had not remitted for a year or more. Because measurement was based upon retrospective reports of the onset and duration of depression, and because of the limitations of the control group, these results required cautious interpretation and replication.

In the controlled, prospective repeated measures design employed by O'Hara et al (1990) to study the PNB, PND and vulnerability factors in a community sample of 179 women, the average length of a depressive episode in the CBG was 45.9 days, which was not significantly different from that of the NCBG. However, the CBG had significantly higher levels of mild dysphoria one week after birth than the NCBG.

Cooper and Murray (1995) also employed a controlled, longitudinal design to study the course of depression in the post-partum in a sample of 55 primiparous women, some of whom had no history of depression (34) and some of whom had a history of mood disorder (21). Each woman had an independently matched control. Depression was measured against RDC (Spitzer et al, 1978), mental state was measured and history of episodes was measured using the SADS-L (Endicott & Spitzer, 1978) during interview at between two and three months, eighteen months and five years postpartum. Results showed that women for whom clinical depression was an index episode experienced a significantly shorter episode than those for whom clinical depression represented a relapse of a pre-existing mood disorder. The women for whom clinical depression
represented an index episode were also found to be at increased risk of subsequent post-partum episodes but not of non-puerperal episodes. In line with this, women for whom it represented a relapse of a pre-existing mood disorder were found to be at increased risk of subsequent mood episodes in the non-post-partum period but not in the post-partum. These results supported and illuminated Nott (1987), Small et al (1994) and Campbell et al (1992). They suggested that within the case group, it was women with histories of mood disorder rather than all women who were at risk of prolonged depressive episodes; and that there was specificity in the type of depression these women would subsequently be at risk of. The investigators suggested that these results were evidence of variability in qualities of clinical depression in the post-partum, such that for some women it was closely related to the transition to maternity, and for others childbirth and maternity was a non-specific stressor or was unrelated. They argued that this result supported theories of specificity.

2.4.5 Summary

Estimates of the prevalence of post-natal depression are relatively consistent, at between 10-15%. Variability across estimates appears to be attributable to the instrument used and the timeframe of measurement. Most of these cases meet diagnostic criteria for minor or major depressive syndromes. Although the weight of evidence suggests that there is not a higher prevalence of diagnosable depression in the post-partum than at non-post-partum times, evidence to the contrary is accumulating and further controlled study is needed.
There is considerable evidence that a significant minority of depressions in the post-partum have an ante-natal onset, and that of those with well established post-partum onset, early warning signs and symptoms may have been present during pregnancy. Index episodes are likely to resolve as diagnostic entities within two to three months, but to be associated with increased risk of subsequent episodes of post-natal depression with further births. Depressions which appear to be a relapse of a pre-existing mood disorder are likely to take longer to resolve and to place the woman at increased risk of further non-puerperal episodes. Both types of post-natal depression may leave residual subclinical symptoms.

2.4.6 Aetiological theories of post-natal depression

A number of theories of risk and aetiology have been proposed to account for depression in the post-partum. These include biological (eg hormonal, family history), social (eg social and childcare support) and psychological (eg personality and cognitive style), with or without explicit recognition of the developmental context. This has led to the accumulation of a vast and ever growing body of literature on the subject. Much of this literature is difficult to interpret because of methodological inconsistencies which limit cross study comparison and interpretation. There has been variation in study design from retrospective to prospective designs. There has also been variation in sampling methods from self-selected to socio-demographically representative samples and in the measurement instruments used from self report to behaviour rating scales. Finally, invalid inferences have been drawn, such as predictive inferences from concurrent measurement of independent and dependent variables. Despite the wealth of literature, there is currently
no consensus regarding aetiology (Boyce & Stubbs, 1994; Cramer, 1993; Gotlib et al., 1991; O’Hara & Zekoski, 1988; Miller, 1993; Robinson & Stewart, 1993). As the purpose of this study is to investigate the role of social and psychological variables in post-natal depression, in the context of female lifecycle development, only a brief overview of biological variables will be made. A more detailed review of the social and psychological variables will follow. More thorough discussion of biological variables can be found in relevant reviews of the literature (Harris, 1996; Kumar & Brockington, 1988; O’Hara & Zekoski, 1988; Stowe & Nemeroff, 1995).

The literature on biological theories of post-natal depression can be broadly differentiated into studies which test “non specific factors” (Kumar & Brockington, 1988, p.37), that is factors proposed to be related to depression in the post-partum on the basis of general theories regarding biology and depression; and studies which test “specific biological factors”, that is factors proposed to be uniquely related to post-natal depression. Examples of the first type include studies of tryptophan levels, cortisol levels and thyroid dysfunction; examples of the latter include studies of hormonal factors such as oestrogen and progesterone which are known to change between ante- and post-natal periods.

In the area of non-specific factors there are a number of theories, most of which are derived from studies of non-post-partum depression. It has been proposed that free serum tryptophan levels may be associated with post-natal depression because this agent is believed to have a role in the development of depression at other times, through the production of serotonin. Thyroid dysfunction has also been proposed to be associated with post-natal depression, because the symptomatology of the former is known to
resemble symptomatology of depression. The likely mechanism of effect here is through the release of cytokines which produce general malaise and depressed mood. Neuroendocrine 'state markers', or neuroendocrine changes such as sleep architecture, structural and functional brain imaging, and problems of the hypothalamic-pituitary-adrenal axis which occur in the contact of other depressions, have also been proposed to be associated. However, in a review of the literature Stowe and Nemeroff (1995) suggest that despite the association between free serum tryptophan and depression, no clear association has been found between this hormone and post-natal depression. Further, despite reports of high prevalence rates of autoimmune thyroiditis in major depression and the puerperium, the prevalence of thyroid dysfunction in the puerperium is low (6%). This makes the likely contribution of this variable to prevalence rates of depression in the post-partum small. Given that positive antithyro-globulin and antimicrosomal antibodies peak at between four and six months post-partum, they recommend that further longitudinal study be made to investigate the relation between this variable and late onset depression. They point out that urinary cortisol and dexamethasone suppression tests have generally been used to measure this variable, and that these methods may not be adequate to the task, confounding results. Finally, Stowe and Nemeroff suggest that though investigators have generally found no association between the rate of dexamethasone nonsuppression and depression in the post-partum, further study is warranted because associations between a marked decrease in the number of platelet 
$[3H]$-imipramine and $[3H]$-paroxetine-binding sites (Bmax) have repeatedly been found in drug free patients with major depression in the non-post-partum period. They report
that no controlled studies have been published regarding rapid eye movement (REM), cerebral spinal fluid or post-mortem brain tissue from depressed samples.

In another recent review of the literature, Harris (1996) concurred with many of the views of Stowe and Nemeroff (1995). Harris reported that the association between thyroid antibody status and PND as measured by RDC (Spitzer et al, 1978) and self report was small, and in extrapolating from the data he suggested that only 4% of childbearing women could be expected to have a mild mood disorder episode with thyroid dysfunction during the eight weeks postpartum. A further 1% could be expected to develop a major depressive episode. Harris noted that there is some evidence of associations between cortisol profile and either PNB or post-natal depression in line with the theory that dysregulation in the hypothalamic-pituitary-adrenocorticoid system is related to depression, but that this has not been replicated and there is little theory regarding a mechanism of effect.

In the case of specific factors Harris suggests that despite evidence of an association between ante-natal progesterone levels and PNB there is little evidence of associations with depression in the post-partum. However, he suggests that further controlled double blind studies are required to rule out this hypothesis. Associated with results of studies examining progesterone, there is preliminary evidence to support the theory that oestrogen falls during the postpartum may be associated with depression. These falls sensitise central hypothalamic dopamine receptors, leading to depressed mood. Studies of this effect have not been replicated to date.

In summary, there is little evidence to support biological explanatory theories of depression in the post-partum, either from a non-specific or specific perspective. This
may be attributable to the relative dearth of published study in this area. Proposed associations between thyroid dysfunction later in the post-partum, dexamethazone suppression, cortisol profiles and progesterone levels in particular, require further and more rigorous study.

In contrast there is considerable data pertaining to the associations between social and psychological variables and post-natal depression. The dominant theoretical perspective guiding this work has been a vulnerability-stress model, in which depression is proposed to develop from the interaction between vulnerability and stressors. This perspective has a long history of investigation in non-PND populations (Brown & Harris, 1978) and it has demonstrated efficacy as an explanatory model. Sharp (1995) differentiated the literature regarding PND into three areas of study which have examined a) vulnerability or risk factors such as demography or cognitive style; b) stressors such as marital, social and childcare support and life events; and c) the interaction between vulnerability and stress factors. The same organisation of the literature will be adopted here.

2.4.7 Vulnerability factors for post-natal depression

Many early studies investigated the role of vulnerability factors in post-natal depression such as demographics (e.g. age, parity and occupation) and personality (e.g. neuroticism). Most of these were derived from attempts to develop profiles of women who became depressed in the post-partum. The designs used in many of these studies were simplistic and the results often negative or inconsistent, making interpretation difficult. Little support has been found for the role of gross personality variables such as
neuroticism in the development of post-natal depression (O'Hara & Zekoski, 1988). As a result, gross personality variables have received little attention during the past decade as reflected in limited mention or absence from recent reviews of the literature (Robinson & Stewart, 1993; Stowe & Nemeroff, 1994). Instead, they have been replaced by a focus upon particular socio-demographic variables and more subtle indicators of personality and self-concept, such as cognitive style, attributional style, and self esteem. There is preliminary evidence that these variables may be implicated in post-natal depression and warrant further study. A brief review of the literature on socio-demographic variables and cognitive-attributional style variables follows.

In their prospective, repeated measures design study of a community sample of 99 childbearing women, O'Hara, Neunaber and Zekoski (1984) examined the role of vulnerability factors (e.g. demographics such as parity, education, income and history of menstrual problems; and cognitive style) and stressors (e.g. life events, social support) in depressive symptoms and diagnosis. They used self report instruments to measure socio-demographic status, depression history, cognitive variables and life stress as predictors. Depressive symptomatology was measured using the BDI (Beck et al, 1961) and depression diagnosis was measured using a structured diagnostic interview (SADS, Endicott & Spitzer, 1978) against RDC (Spitzer et al, 1978) as the criterion. Assessments were made between pregnancy and nine weeks post-partum. The vulnerability variables of previous depressive episodes and history of depression in a first degree relative were significant predictors of depression diagnosis. The strength of predictions was increased by adding both vulnerability and stressor variables into a statistical model, such that different combinations of factors predicted depression symptoms and diagnosis. A model
incorporating symptomatology during pregnancy, cognitive self-control attitudes and stressors surrounding childbearing predicted depressive symptoms. This model accounted for around 50% of the variability in symptomatology. A model including first degree relative with depression, number of previous depressions, number of life events since the beginning of pregnancy and child care related stressors predicted depression diagnosis. This model accounted for around 30% of the variability in diagnosis. The investigators interpreted their results as providing support for the vulnerability-stress model, particularly regarding certain socio-demographic and cognitive-style variables. They also suggested that symptomatology was better predicted than diagnosis because it was continuous, more stable and more related to stress than diagnosis. The lack of consideration of hormonal factors made results incomplete and the absence of a control group precluded the drawing of inferences regarding the specificity of post-natal depression.

In a larger prospective, repeated measures design using a cross sectional community sample of 295 childbearing women, Gotlib et al (1989) studied some of these demographic variables. As did O’Hara et al (1984) they found that the diagnosis of post-natal depression was not associated with parity or education, nor was it associated with occupational status and age. In this study the only variable with which diagnosis was associated was status as a housewife, such that the case group comprised 40% housewives. However, given the overrepresentation of housewives in the case group, it seemed likely that some sampling bias had occurred, making the obtained association between caseness and status as housewife questionable.
Further support for the lack of association between age or employment status and PND as measured by self report or diagnostic criteria (Gotlib et al, 1989) was obtained in the controlled, prospective study of a multiparous sample by O’Hara, Schlechte, Lewis and Varner (1991). In addition these investigators found that marital status and socio-economic status did not predict post-natal depression. However, as did O’Hara et al (1984) number of previous depressive episodes was a significant predictor of both outcome variables. Whiffen (1988a) prospectively studied 115 primiparous community based women from the third trimester until five weeks post-partum in a multivariate analysis of ante-natal and post-natal vulnerability-stress factors. Data regarding demographics, attributional style, expectations regarding infant crying, marital adjustment and stressful life events were collected as ante-natal predictors and data were collected again at five weeks post-partum as post-natal predictors. Maternity blues and experience of labour were assessed by telephone at 11 days post-partum. Depressive symptoms as measured by the BDI (Beck et al, 1961) and caseness as measured by the SADS (Endicott & Spitzer, 1978) were used as criteria. In this study none of the vulnerability variables measured ante-natally predicted post-natal depressive symptoms.

The results of the prospective study of ante-natal and post-natal vulnerability factors in a community sample by Astbury et al (1994) also supported the lack of association between age, education or parity and PND (Gotlib et al, 1989; O’Hara, et al, 1991). Though independent associations were found between post-natal depression and certain vulnerability factors such as marital status, being born overseas and feelings of dissatisfaction with maternity care, none of these made additional contributions to the prediction of post-natal depression when a more complex, logistic regression approach
was taken. The only vulnerability variable which was included in the predictive model was lack of confidence as a mother on discharge, adding to preliminary evidence regarding the role of cognitive style and subtle indicators of personality such as self-esteem.

These results were partially supported in the prospective study of a community sample of 206 European and Maori women from New Zealand by Webster et al (1994). In this study post-natal vulnerability factors, particularly demographics and cognitions such as attitudes to the baby, were measured using self report instruments at four weeks post-partum. Post-natal depression was measured using the EPNDS with a cutoff of 9/10 followed up by a diagnostic interview for those scoring above the cutoff, at between eight and ten weeks post-partum. Analysis of variance showed that vulnerability factors such as marital status, age at time of birth of first child, being of Maori ethnicity, history of psychiatric admissions and satisfaction in relationship with partner were associated with depression in the post-partum. These variables together predicted only 21% of the variance in depression. Women who developed depression were also found to show a lack of enjoyment and less positive attitudes toward the infant than those who did not, characteristic cognitive and attitudinal features which required further investigation. The association found between ethnicity or marital status and depression supported results of Astbury et al (1994). As this sample was biased in that it contained a high proportion of ethnically at risk women (Maoris) who were also over-represented in the case group; and because measurement of depression may have led to overestimations, these results must be interpreted with caution. The importance of attitudinal and cognitive variables in post-natal depression, namely self esteem, was also found in the prospective study of 235
Australian, community-based women by Stamp and Crowther (1994). However, because self-esteem was the only correlate studied, the association found between the variables may not accurately reflect effects when more complex approaches are taken to prediction.

Warner et al (1996) used a concurrent design to study the association between demographic variables and post-natal depression in a very large community sample of 2,375 women between six and eight weeks post-partum. Post-natal depression was measured using the EPNDS (Cox et al, 1987) with a cutoff of 13 and socio-demographic data were collected using interview regarding variables such as age, occupation, marital status, parity, family size and obstetric complications. Regression analysis showed that the only variables associated with depression were having an unplanned pregnancy, not breast feeding at six weeks and unemployment of self or partner. However, these results must also be interpreted cautiously because of the potential bias introduced by sampling method and concurrent measurement of independent and dependent variables. In this study women in post-natal wards were approached on alternate days, leading to an over-representation of those who had remained in hospital beyond 24 hours following obstetric and/or neonatal illness.

One of the best controlled and most-recent studies against which to compare existing data is the controlled longitudinal study by Campbell et al (1992) of a large sample of 70 primiparous women with PND and a matched control group. In this study the case group were found to have a higher number of previous depressions than the control group, supporting the results of O’Hara et al (1984) and O’Hara et al (1991). Relatedly the case group reported a higher frequency of affective disorder in their families than controls.
The meta analysis of rates and risk factors of post-natal depression across 56 independent studies carried out by O’Hara and Swain (1996) indicated that particular vulnerability and stress factors were useful predictors. Vulnerability factors included belonging to low social strata and depressed mood during pregnancy. Though the contribution of these variables to risk varied somewhat according to the instruments of measurement and the timeframe of measurement, the patterns were similar. Despite the fact that these results were consistent with much of the literature, the finding that ante-natal depressed mood was a risk factor for post-natal depression suggests that data in this analysis and all the studies from which ante-natal data were collected may have been contaminated by levels of psychopathology present at that time. This potential confound should be taken into account in interpreting results.

Despite the converging literature regarding particular vulnerability variables, their limited usefulness in independently predicting post-natal depression has been shown in a number of studies which have attempted to develop a predictive index or screening instrument derived from empirical work regarding vulnerability factors, as described in the following.

Appelby, Gegoire, Platz, Prince and Kumar (1994) used a prospective repeated measures design to study a community sample of 126 primiparous and multiparous women from a socio-economically poor area of London to examine the predictive validity of various psychosocial correlates for post-natal depression. Among these, demographic variables such as depressive history and unwanted status of pregnancy; personality-related variables such as health worries and psychological problems and stress variables such as relationship with partner, social support and financial situation were measured
using a 10 item ante-natal screening questionnaire. Post-natal depression was measured using the EPNDS (Cox et al, 1987) with a cutoff of 12 or more. Measurement of both psychosocial correlates and depression was made at 36 weeks ante-natally and of depression eight weeks post-natally. Though correlations were found between scores on the ante-natal screening instrument and post-natal EPNDS, and between the ante-natal and post-natal EPNDS, this was largely attributable to correct predictions of women who would not become depressed (few false positives) rather than women who would (many false negatives). When combined with ante-natal EPNDS the ante-natal screening instrument correctly predicted caseness 62% of the time only. Overall the ante-natal screening instrument showed little value as a predictor of post-natal depression and the investigators suggested that the screening instrument and ante-natal EPNDS were not valid for predictive purposes. They proposed a number of reasons for the non-significant results. Firstly, they acknowledged that the psycho-social variables measured were derived from studies of middle-class samples, and might not have been valid for the high risk sample studied. Secondly, they suggested that the psychometric properties of the screening instrument might be poor. Thirdly, they proposed that post-natal depression was likely to be a heterogeneous phenomenon, with varying clusters of interactions between social, cognitive and biological variables leading to it.

In an effort to address these methodological issues, Cooper et al (1996) drew upon social and psychological variables associated with vulnerability in two large epidemiological studies (Cooper et al, 1988; Murray 1992) to develop a 40 item self-report screening questionnaire for post-natal depression. This instrument spanned variables including vulnerability factors such as demography, status of pregnancy,
symptomatology and previous significant losses; and stress variables such as complications during pregnancy, marital relationship, family relationships, social supports, housing and financial situation. They employed a prospective design and a community sample of 5,124 primiparous and multiparous women whom were assessed between 32 weeks ante-natally and five weeks postpartum. Depression was measured using the EPNDS (Cox et al, 1987) with a cutoff of 9 and those scoring above this were administered a structured diagnostic interview for major depressive disorders or a telephone interview. A predictive index of variables was derived using logistic regression, then applied to a demographically representative subset of the total sample for validation. Use of the index was found to have mixed results in predicting depression. Scores of 27/40 or more were associated with a 35% risk of PND and more than 33% of those who developed depression scored in this range. Use of the index increased prediction above the 1:9 base rate for post-natal depression, though the majority of cases were not detected. Like Appelby et al (1994) the investigators postulated that the predictive index might have been of limited use because aetiology was heterogeneous. As a result they suggested that the predictive validity of the index might be improved through including important post-partum variables such as infant temperament with which ante-natal variables might interact.

Today socio-demographic variables are generally used as control variables in more sophisticated studies of post-natal depression but preliminary evidence regarding characteristic cognitive style, attitudinal style and view of self is promising. The efficacy of these variables, which reflect a woman's psychological construction of her
experiences, is also consistent with the literature regarding transition to motherhood, discussed in Section 1.4.

2.4.8 Stress factors for post-natal depression

There has also been much study of stress related variables such as marital, social and childcare support and life events. There is now considerable evidence that the degree of stress, social support and difficult life events experienced by a woman during pregnancy and the post-partum is an important factor in her emotional wellbeing.

In the prospective study of a community sample by O'Hara et al (1984) the stressor variable of so-called 'life stress' independently predicted depression diagnosis during the first two months post-partum. The strength of predictions was increased by including both vulnerability and stressor variables into a model, and different combinations of variables were found to predict depressive symptomatology and depression diagnosis. Stressor variables only will be discussed here. A model incorporating the stressor variables of stressors surrounding childbearing predicted depressive symptoms. A model incorporating number of life events since the beginning of pregnancy and childcare-related stressors predicted depression diagnosis. A further analysis of these data was made to profile depressed and non-depressed participants along the dimensions of stressful life events and social support by O'Hara (1986). As expected the analyses showed that post-natally depressed women experienced higher rates of stressful life events and childcare-related events than non-depressed women. Post-natally depressed women also received less emotional and instrumental support than non-depressed women, particularly from their spouses and were more dissatisfied with their
marital relationships. The investigators interpreted their results as providing support for the vulnerability-stress model, and the role of stressors such as life events since birth, and spousal and broader social support in the aetiology of post-natal depression. However, it is important to note that direction of causality could not be established in this study and it is possible that internal, individual factors such as interpersonal style, potentiated depression in some women.

In the prospective, repeated measures design by Whiffen (1988a) of a primiparous community sample between the third trimester and five weeks post-partum, data were collected regarding vulnerability (demographics, attributional style) and stressor variables (marital adjustment, life events), along with data on mediating variables such as expectations regarding the infant. Data on vulnerability and stressor variables were collected by self report and telephone interview. Data on depressive symptoms were measured by the BDI (Beck et al, 1961) and caseness was measured by the SADS (Endicott & Spitzer, 1978). None of the vulnerability variables measured ante-natally predicted post-natal depressive symptoms. However, stressor variables measured ante-natally and post-natally predicted post-natal depressive symptomatology. In the case of stressors measured, ante-natal marital adjustment and life stress were significant predictors of post-natal depressive symptoms and along with the vulnerability factor of ante-natal symptomatology, these accounted for 22% of the variance. Cognitive style variables such as expectations regarding infant crying were also significant. Stressor variables measured during the post-partum including tension and cognitive impairment, significantly predicted postpartum depressive symptoms, accounting for 18.6% of the variance. When these stressor variables were combined the strength of predictions was
increased, to 29% of the variance in post-natal depressive symptoms. None of the vulnerability variables measured ante-natally predicted depression diagnosis. Ante-natal stressors such as marital adjustment and depressive symptoms predicted diagnostic status, accounting for 10% of the variance. The post-natal stressor of tension also predicted diagnosis. When combined, these ante-natal and post-natal stressor variables accounted for 34.3% of the variance in depression diagnosis. Whiffen suggested these results supported the efficacy of taking a multifactorial approach to the prediction of post-natal depression, because it might vary according to the particular set of variables implicated in the aetiology. She suggested that further study of depressive symptomatology was warranted given that this seemed to reflect both current distress and risk of future distress. Whiffen also recommended further study of expectations such as those regarding the infant, given that expectation-outcome disparity might be an important variable to consider.

Results of the retrospective study of vulnerability and stress variables as predictors of post-natal depression in a community-based sample of 799 multiparous, Australian women at between eight and nine months after delivery by Astbury et al (1994) supported the importance of taking a more comprehensive approach to the study of aetiology. In this study the vulnerability variables measured included demographics and confidence in mothering capacity, and stressor variables such as age at birth of first child, labour complications and labour context, all of which were measured using self-report instruments. Depression was measured using the EPNDS (Cox et al, 1987) with a clinical cutoff of 13. Though a number of vulnerability (demographic) variables were independently associated with depression, these did not make any additional contribution
to the prediction of depression when a more complex, model-building approach was taken. The best predicting logistic regression model was almost entirely comprised of stressor variables, including age at birth of first child, labour complications, bottle feeding, dissatisfaction with ante-natal care and having unwanted people at the birth. Lack of confidence in mothering on discharge, a variable reflective of self-esteem and cognitive style, was the single vulnerability variable included in the model. The investigators interpreted these results as supporting the role of stressors in the aetiology of post-natal depression, particularly stress around labour experiences.

In the 12-18 month follow-up of a representative subset of this sample, Small et al (1994) examined women’s retrospective reports of their experience of depression. Home based interview was used to collect data regarding women’s subjective experiences. Women who reported feeling depressed spontaneously perceived the contributing factors to be feeling unsupported or isolated, fatigue and poor physical health. With some interviewer prompting many added that lack of time or space to themselves and material circumstances were additional factors. Of the women who reported an increase in their depression over time perceived contributing factors included feeling less supported, relationship difficulties, financial problems and child-ill health. Those who reported a decrease in the factors perceived to be contributing to depression were increased spousal support, returning to work, reduced fatigue and the child growing older. When asked what advice they would give other women who were in similar situations, the most frequent suggestion made was to find someone to talk to. Despite the retrospective nature of these data the emphasis upon support, relationship harmony and other stressors such as
ill health in the development and maintenance of depression, supported results of O’Hara (1986).

In the prospective, cross sectional study of a community sample of 730 women by Gotlib et al (1991) the predictive role of quality of parenting relationship, marital distress, stress, dysfunctional cognitions and coping in post-natal depression was examined. Stressor variables were measured using self report instruments. Symptomatology of depression was measured using the BDI (Beck et al, 1961) and caseness was determined using the SADS (Endicott & Spitzer, 1978) against RDC (Spitzer et al, 1978).

Assessments were made between the second trimester and one month post-partum. Different combinations of variables were found to be associated with post-natal depression, ante-natal depression which resolved and ante-natal depression which continued into the post-partum. Women who became depressed in the post-partum reported higher levels of stressors such as perceived stress and lower levels of marital satisfaction; and particular personality-related variables such as greater use of escape-avoidance as a coping strategy and perception of self as having received less paternal caring and greater maternal overprotectiveness during childhood. Women who experienced an ante-natal depression which resolved showed lower levels of perceived stress and higher levels of ante-natal marital satisfaction; however, when these variables were entered into a regression analysis none significantly predicted recovery. Women whose ante-natal depressions continued into the post-partum reported higher levels of perceived stress during pregnancy, lower levels of marital satisfaction, greater use of escape-avoidance coping strategies and more negative perceptions of the amount of caring they had received from their own mothers and fathers during childhood than those
who remained non-depressed. These results regarding the role of spousal and familial support were consistent with those of O'Hara (1986) and Small et al (1994). Results regarding the contribution of stressors during pregnancy extended O'Hara's work, by pointing to cumulative effect of pregnancy experiences in mood over time. In line with this the investigators interpreted their results as supporting the buffering function of particular psychosocial variables in the development and maintenance of PND.

In the meta analysis of 56 independent studies by O'Hara et al (1996) stressor variables which were found to predict post-natal depression were stressful life events, spousal and broader social support during pregnancy, and obstetric complications. Though the contribution of these variables to risk varied somewhat according to the instruments of measurement and the timeframe of measurement, the patterns were similar. However, because ante-natal depressed mood was also found to be a vulnerability factor and all these variables were measured during pregnancy, these results and those of the independent studies from which they were derived, may have been confounded.

Overall, many stressor variables have been found to play an important role in the PND equation. In addition, some of this research complements preliminary work regarding characteristic cognitive style, by suggesting that characteristic coping behaviours also warrant further study. Like preliminary results regarding cognitive style, those regarding coping style are consistent with some of the transition to motherhood literature discussed in Section 1.4. These variables may be highly useful indicators of the way more gross vulnerability and stress variables are mediated within the individual. However, variables such as 'perceived maternal overprotectiveness’ may confound experienced and actual reality. Future study of variable such as 'perceived maternal
overprotectiveness' would profit from clear and careful operationalising of the variable under study.

2.4.9 Vulnerability-stress interaction in post-natal depression

Though there is increasing evidence that some vulnerability and stressor variables have a role in the aetiology and maintenance of post-natal depression, there are a number of problems with this research and the application of it. Firstly, the variables identified account for relatively small proportions of the variance in post-natal depression. Most of the factors and processes underlying it remain inadequately understood or unknown. Secondly, much of this work implies uni-directional or bi-directional effects as underlying post-natal depression. This leaves little room to examine the transactional nature of processes leading to and maintaining it. Thirdly, most of these variables have been identified in studies conforming to the conventions of empiricist science, in which data have been reduced to common features across samples. As already shown, this approach sometimes obscures important individual differences and factors mediating post-natal depression for each woman, making it difficult to apply results in preventative and clinical settings with individuals.

In recent times some investigators have begun to integrate the rigour of empirically-driven research methods with the exploration of variables which mediate post-natal depression in individual women. Perhaps the best example of this approach is a recent controlled prospective study by O'Hara et al (1991). In this study both the independent contribution of variables and the contribution of their interaction, have been included in the predictive equation, using a statistical model of best fit. These
investigators recruited a community based sample of 182 women, each of whom nominated five non-childbearing but socio-demographically similar friends, the most similar of whom was recruited as a control. This enabled comparison of a childbearing group (CBG) and matched non-childbearing group (NCBG).

Vulnerability variables such as depression history (previous episodes, presence of a depressed first degree relative, depression during pregnancy and depression level during pregnancy) and characteristic attitudinal style (attitudes toward self control) were measured using self-report instruments. Stressor variables such as spousal relationship, number of life events experienced during pregnancy and the puerperium; peripartum events during pregnancy, labour and delivery and childcare stress were also measured using self-report instruments. In addition, hormonal data were collected using blood samples, regarding oestradiol, progesterone, prolactin, cortisol and dexamethasone levels. Data were collected between the second trimester and nine weeks post-partum.

Regression analysis showed that previous history of depression, particularly depression prior to pregnancy, independently predicted depression in the childbearing group. However, the strength of predictions was markedly increased by including vulnerability-life stress interaction terms, leading to models which accounted for 40% of the variance in depression diagnosis and 50% of the variance in depressive symptoms among childbearing participants. The best predictive model for the control group was similar, but showed less predictive strength, as would be expected given that they had not experienced the specific stressor of childbearing. The only significant finding regarding hormonal variables was that the CBG showed significantly lower levels of oestradiol on two of the occasions measured (week 36 pre-test and day two post-test). The investigators
interpreted these results as supporting both the vulnerability-stress model of post-natal depression, particularly in predicting depressive symptomatology, and the need for investigators to go beyond examining narrow relationships between independent and dependent variables to consider the contribution of interactions between variables.

2.4.10 Summary

There is little evidence for biological theories of aetiology in post-natal depression but considerable evidence for psychosocial ones, particularly a vulnerability-stress model. Though results are mixed it appears that some vulnerability and stressor variables are relevant in the study of post-natal depression and that these are best included either as control variables or in predictive models of best fit. The predictive strength of such models is likely to be increased in two ways. Firstly, it seems important to complement the study of gross impacts associated with broadly defined variables, to examine the impact upon the individual, as reflected in characteristic cognitive styles and coping behaviours. Secondly, variables such as ‘perceived maternal overprotectiveness’ may confound external and internal reality. Because preliminary data suggest the woman’s construction of events may be a valuable clue to the way experiences are being mediated within her, and because this is consistent with some data derived from the attachment literature to be described next, it seems important to disentangle and operationalise these variables. Thirdly, some studies have profitably gone beyond the analysis of uni-directional or bi-directional effects, to the study of interactions between variables, and further such work seems indicated.
CHAPTER 3 INFANT-MOTHER RELATIONSHIPS - THE INFANT EXPERIENCE

3.1 History of the study of the infant’s experience of the infant-mother relationship

One of the first people to propose the unique psychological significance of early infant-mother relations in human development was Freud (1933). This proposition, which had been derived from the reconstructions of infantile experiences among adult psychotherapy patients (Haberstaadt-Freud, 1993; Holmes, 1993) quickly became a foundation of psychoanalytic drive-reduction theory. Despite the fact that the theory built around this assumption became the dominant personality and psychopathology theory of the early 1900s, little attempt was made to collect data directly from infants and mothers for some years. It was not until publication of the seminal works of Spitz (1950) who observed institutionalised infants during W.W.I., of Anna Freud and Dorothy Burlingham (1965) who established ‘war nurseries’ to care for children during W.W.II. and of the Robertsons (1967) who studied the effect of separations upon young children in the post-W.W.II. era, that insight gleaned from direct observation began to inform theory. With the resurgence of empiricism across human and behavioural sciences around the 1960s, these early observational studies have been elaborated upon in many ways.

Firstly, the direct observation of infant-mother relations has become an established form of scientific inquiry within the psychoanalytic tradition, central to significant advances in developmental and clinical theory by people such as Winnicott (1949; 1959), Mahler et al (1975), Sandler and Sandler (1978) and Stern (1985). More recently, direct observation has also become a foundation of pre-clinical training within
this tradition (Bick, 1964; Braffman, 1988; Henry, 1996; Miller, Rustin, Rustin & Shuttleworth, 1993). Secondly, based upon Winnicott’s (1949) suggestion that an infant does not exist in isolation but within a relationship with a primary caregiver, usually mother, direct observation of infant-mother relations has become an important method of assessing infant development (Piaget, 1952; 1954; 1962). Thirdly, observation of behaviour has become a useful means of assessing infant clinical status among child psychologists and psychopathologists (Bretherton, 1990; Crittenden, 1988; 1995a; 1995b; 1996; Emde, Bingham & Harmon, 1993; Hopkins, 1990; Sameroff, 1993; Zeanah, 1993; 1996). A vast body of systematic, empirically-driven research has been amassed regarding normal and potentially pathological infant development through the use of observation-based research paradigms, most prominently but not exclusively from within the infant attachment tradition (Ainsworth et al, 1978; Bowlby, 1969, 1975, 1980; Crittenden, 1988; 1995a; 1995b; 1996; Lyons-Ruth et al, 1991; Main & Hesse, 1990; Main & Solomon, 1986; Main & Weston, 1979). Though the limitations of too heavy reliance upon behaviour-observation methods of inquiry in this area have been acknowledged (Zeanah & Barton, 1989, Seligman, 1991), the data derived have provided important clues to infant functioning. Further, this body of work has laid the empirical foundation necessary for investigators to go beyond the study of observable behaviour to begin examining the infant-parent relationship at the representational level. Because of obvious obstacles to measuring the mental representations of the infant, most study of representational level experience has been made with the mother, and this will be discussed further in Chapter 4.
On the basis of evidence regarding animals, non-human primates, disturbed children in institutional settings and children who had been placed in residential nurseries during periods of separation from their families, Bowlby (1969, 1975, 1980) proposed that human beings are born with a genetically-programmed motivational and behavioural system, the purpose of which is to help the individual meet the survival-based need for protection at times of vulnerability and distress. Bowlby termed this system the attachment system. The attachment system is first mobilised in infancy, and functions by orienting the infant toward "some other differentiated and preferred individual, usually conceived of as stronger and/or wiser" (Bowlby, 1975, p292) in order to have his or her needs for protection and safety met. This preferred caregiver is termed the attachment figure.

The attachment system functions at an objective (observable) behavioural level and at a subjective (representational) level in which there are characteristic affective and cognitive signatures. For example, early attachment-related experiences of being comforted become associated with subjective feelings such as contentment, and these gradually become associated in the infant's mind with characteristic representations of self, other and of the attachment relationship. The representations which have accompanied the dominant attachment experiences of the infant become characteristic 'internal working models' which represent "a version (s) of lived experience" (Zeanah & Barton, 1989, p137) abstracted across many events (Bretherton, 1992; Main, 1991). Complex systems of internal working models come to guide the individual's dominant view of self, others, his or her expectations about how his or her needs will be responded
to and about how he or she should behave in order to achieve this goal consistently over time (Zeanah & Barton, 1989).

In the infant, separation or deprivation from the attachment figure generates significant distress. Bowlby proposed three stages of psychological adjustment to separation from the attachment figure - protest, despair and detachment. During the first phase 'protest', distress at the loss of the figure is expressed through attachment behaviours such as prolonged crying and screaming, which function to increase the proximity of the figure. During the second phase 'despair', high levels of distress about the prolonged separation continue along with intense yearning for reunion; however, this distress becomes less overtly expressed and is often evidenced in social withdrawal and unconscious searching for the absent figure. Finally, the third phase 'detachment' is characterised by a partial or complete absence of attachment behaviour and an apparent lack of awareness of environmental stimuli which might trigger attachment behaviours or remind the child that his or her attachment needs will not be met.

Bowlby believed that infants whose attachment experiences had been generally satisfying and secure would have sufficient confidence in the return of the figure to cope adequately at times of separation, and would not manifest grossly distressed behaviour. Infants whose attachment experiences had instilled in them anxiety and fearfulness regarding the availability of the attachment figure, would be likely to manifest behaviour which showed their difficulties resolving the distress. Examples would include pathologically anxious, grief-sticken and depressive, or denying and repressing behaviour.
Bowlby recognised that between these two extreme developmental pathways there were many variations on attachment relationships within which attachment behaviours of the infant and caregiving responses of the attachment figure might be elicited or inhibited by particular sets of conditions. Further, he proposed that the style of caregiving provided was strongly associated with the attachment style of the child - “in considering patterns of attachment that characterise different children, it is constantly necessary to refer also to patterns of mothering that characterise different mothers” (Bowlby, 1969, p333).

Today the development of an attachment relationship is acknowledged to be the infant’s first relationship experience, a prototype for subsequent relationships and to be the first developmental task of infancy (Peterson, 1987). Further, attachment theory has become the most widely accepted theory of infant psychological and social development among child psychologists and developmental psychopathologists (Bretherton, 1990; Hopkins, 1990). The work of a colleague of Bowlby’s, Mary Salter Ainsworth, who made two large, systematic observational studies of infant attachment behaviour (Ainsworth et al, 1978) has subsequently made the most significant contribution to our understanding of the behavioural expression of variations in infant-caregiver relationships.

3.2 Early studies of infant-mother relationships

In the first of these, termed the ‘Gandan study’ Ainsworth and her colleagues set out to systematically observe 26 Gandan infant-mother dyads over a nine month period, supplementing these data with interview records from the mothers. Ainsworth’s observations broadly supported Bowlby’s theory of the behavioural manifestations of
attachment and the view that that these functioned to promote proximity to caretaking in times of distress. Data also supported his proposal that maternal variables were important influences over the quality of the attachment relationship, particularly the timeliness and appropriateness of maternal responses. Ainsworth noted that infants of mothers who showed high levels of 'sensitivity' appeared 'securely' attached more often than those whose mothers showed low levels of sensitivity (Bretherton, 1992). She termed this construct 'maternal sensitivity' and proposed that it was one of the central factors through which security of the attachment relationship was mediated.

In the second study, termed the 'Baltimore study', Ainsworth selected 23 mother-infant dyads from white, middle-class Baltimore families and systematically observed them during the first year of the infants' lives. Variables related to the infant, the mother and their interaction across a range of interactional contexts such as feeding and holding were measured using a strictly empirical approach, the methodological rigour of which is regarded by some as unmatched (Bretherton, 1992). These data were combined with data from three other attachment-related observational studies in which the sample demographics resembled those of her own (Ainsworth et al, 1978), providing an aggregate of 106 independent cases. Data were analysed at three, six, nine and twelve month intervals to enable examination of developmental patterns over time.

Data from the Baltimore study supported Ainsworth's earlier findings and thus Bowlby's theory regarding the critical influence of maternal variables upon quality of attachment relationship. They also identified distinctly different patterns of infant-mother interaction leading to different behavioural outcomes. Styles of infant-mother interaction varied along the maternal dimensions of sensitivity as in the Gandan study, and along the
dimension of close bodily contact between infant and mother. Infants who scored high on measures of security more often had mothers who were sensitively responsive to their communications and who were comfortable with, and enjoyed, close bodily contact than infants who scored low on these dimensions. Though close bodily contact had not been investigated by Ainsworth in the Gandan study this finding was consistent with Bowlby’s observation about the effectiveness of close bodily contact in terminating intense attachment behaviour and distress.

Comparison of early and later time samples showed that early interactional history was an important predictor of subsequent infant behaviour. Infants whose mothers had responded sensitively to their crying during the first few months tended to cry less toward the end of the year and to rely more on subtle forms of communication such as facial gestures than infants whose mothers had not been as sensitively responsive. Further, infants whose bids for close bodily contact had been responded to promptly and sensitively during the first few months tended to accept being put down and to cling less often toward the end of the year than infants whose mothers had not been as sensitively responsive.

However, the most influential development from the Baltimore study was a laboratory procedure designed to measure individual differences in the behavioural expression of infant attachment when the infant was around one year of age. This procedure experimentally manipulates the balance between the attachment system (response to fear provoking stimuli such as separation) and exploratory system (response to curiosity-provoking stimuli in the environment such as a stranger), with the manifest behaviour pattern being a reflection of the quality of an infant’s attachment relations with
a given attachment figure. A series of scenarios are designed to activate these systems at increasing levels of intensity during the course of 20 minutes, eliciting “expected behaviours and highlighting individual differences” (Ainsworth et al, 1978, p33). Data generated are coded in four ways: the incidence of specific behaviours, the frequency of behaviours, interactive behaviours and an overall classification of attachment organisation. This laboratory procedure is called the Strange Situation (SS) and has since become synonymous with infant attachment (Bretherton, 1992).

When administered to the 106 mother-infant dyads at the end of the infant’s first year eight identifiable and distinct patterns of separation-reunion behaviour were identified (A2, A1, B1, B2, B3, B4, C2, C1) and collapsed into three primary classifications (Ainsworth et al, 1978; Ainsworth, 1979): secure (B1, B2, B3, B4), insecure-avoidant (A1, A2) and insecure-resistant (C1, C2). These classifications were validated against longitudinal data from the home observations Ainsworth had conducted.

Most infants (66%) explored actively with mother present and became distressed at separation, ceasing their exploratory behaviour. These infants sought close proximity with the attachment figure on reunion, most for close bodily contact, were consolable and quickly resumed exploration of their environments. Home observation showed that these infants used clearer, more varied and subtle modes of non-crying communication, showed less distress at separations, ‘sank in’ and moulded themselves to their mother’s bodies when held but were content to be put down and followed verbal commands more often than other infants. Correspondingly, mothers of these infants responded more promptly, were more sensitive, accepting, cooperative, and psychologically accessible; they were more affectionate during bodily contact, and more tender and careful in their holding of
the infant than mothers of other infants. In Ainsworth’s classification system this style was termed secure (B). Hopkins (1990) suggests that these infants have developed the Ericksonian construct of ‘basic trust’.

Some infants (22%) showed minimal distress on separation though may have searched for mother, and on reunion showed either proximity seeking mixed with avoidance or exclusively avoidant behaviour such as turning away, moving past and gaze aversion. Often this avoidance was assisted by seizing upon an inanimate object or other activity (Main & Weston, 1979). Paradoxically these infants were also noted to show instances of unprovoked anger at the mother during reunion, in the form of unexpected attacks or swipes at her. Home observation showed these infants more often to show overt anger and to protest at being put down; and less often to ‘sink in’ to mother when held than other infants. Mothers of these infants were more inept in their handling of the infants; were more rejecting, more interfering in their pick-ups and in reinforcing verbal commands with action; showed more aversion to bodily contact, more affective restriction, more anger, more rigidity and more compulsive behaviour than mothers of other infants. This style has been termed insecure-avoidant (A). Ainsworth et al (1978) characterise this style as representing in the infant a fundamental “fear (of) what (he or she) wants” (p130) and contends that it is a generalisation of a defensive exclusion strategy into a dominant behavioural organisation, which occurs because of repeated insensitive rejection by the attachment figure when the infant is distressed.

A small group of infants (12%) were anxious with mother present and became intensely distressed on separation. On reunion they were openly angry at mother, showed evidence of both proximity-seeking and resistant behaviour such as distressed crying and
retaliative kicking of mother when she offered comfort. Home observation showed them to cry for longer periods and show more separation distress than other infants. Mothers of these infants were found to delay responding to their infants’ signals more often; to more often occupy their time while holding the infant with other activities and to more often enjoy close bodily contact but to be insensitive to the infants’ signals regarding this than mothers of other infants. This style has been termed ‘C’ or insecure-resistant. Ainsworth characterises this style as representing the infant’s “fear that (he or she) will not get enough of what (he or she) wants” (1978, p130). She suggests that this style is generated from the anxiety and grief associated with erratic contact with or inconsistent care by the attachment figure, and differs from the avoidant adaptation in that the conflict remains prominent having not been obviated through defensive operations.

This classification system has since been extended to increase the system’s sensitivity to other styles of attachment. Of the additions proposed, Main and Solomon’s (1986) set of criteria for classification into a third insecure attachment group has been most widely accepted. These criteria include a) disordering of temporal sequences such as strong avoidance followed by strong proximity seeking; b) contradictory behaviour such as approaching with head averted; c) incomplete or undirected movements such as stereotypies; d) direct indices of confusion or apprehension such as mouthing his or her own hand when parents enter and e) behavioural stilling or freezing. They have termed this style insecure disorganised-disoriented (D) and contend that these infants are differentiable from other infants because they lack a coherent and organised attachment strategy to guide them in their attachment relations. The D attachment classification has been conceptualised in ethological-attachment terms as representing “responses to
unresolvable conflict concerning whether or how to maintain access to the attachment figure at times of stress” (Lyons-Ruth et al, 1991, p378) and is believed to develop in response to repeated trauma of varying degrees to the infant (Crittenden, 1988; Lyons-Ruth et al, 1991; Main & Hesse, 1990; Moore, 1997) in which parental behaviour is frightening or frightened (Main & Hesse, 1990). The D classification is made in addition to one of the other three, and conceptually, is believed to denote the potential to decompensate from one of the organised strategies to a state of disorganisation and disintegration at times of strain, in these vulnerable infants. Recent reviewers of the D classification literature (Feeney & Noller, 1996; Moore, 1997) suggest that the classification now constitutes a major conceptual and measurement development in attachment-based research.

Following the work of Ainsworth was much systematic study of the early antecedents of attachment behaviour and classification, particularly maternal variables such as ‘sensitivity’ and infant variables such as temperament. Unfortunately much of this early research is difficult to interpret because of conceptual, sampling and methodological issues (Lamb, 1987; Vaughn; Stevenson-Hinde; Waters; Kotsaftis; Lefever; Shouldice; Trudel & Belsky, 1992). Firstly, much of this research has been atheoretical, testing for statistical associations rather than theoretically or conceptually derived contingencies between independent and dependent variables, making it of limited use in the development of theory. Secondly, this research is difficult to interpret because most samples were drawn from predominantly white, middle-class populations, necessitating caution when generalising results. Thirdly, there has been much variability in the instruments used to measure the independent variables, making cross-study
comparison difficult. Fourthly, the reliance upon a single dependent variable, attachment style (classification), narrowed the attention of investigators to gross, categorical dimensions of attachment behaviour. Fifthly, the almost exclusive reliance upon the SS procedure as the instrument of measurement of the dependent variable has proved problematic, because the SS necessarily limits and imposes upon the investigator’s field of view and is not without its own psychometric drawbacks. However, there is considerable evidence from among the more rigorous studies that maternal variables make a strong contribution to attachment behaviour and classification; and to a lesser extent, that infant variables are related to some attachment behaviours.

Belsky, Rovine and Taylor (1984) used a prospective, repeated measures design to study the contribution of maternal and infant variables to infant attachment in 60 white, middle-class infant-mother dyads. Infant-mother interaction was observed between one and nine months and scored using behaviour rating scales along numerous dimensions. These included maternal vocalisation to infant, infant vocalisation, maternal responsive vocalisation, maternal stimulation/arousal, infant response to maternal stimulation, maternal positive affect, infant look at mother, maternal undivided attention, three step contingency, infant fuss/cry, maternal soothe, maternal hold and maternal feed. Scores on these subscales were collapsed into constructs such as maternal involvement and reciprocal interaction. Infant attachment style was measured using the SS at 12 months. Though none of the infant variables were found to be associated with attachment classification, the maternal variable of maternal involvement and interactional variable of reciprocal interaction were associated with attachment at all time points. Analysis of the interactional histories of each attachment classification showed that overstimulation was
associated with avoidance, understimulation with resistance, and maternal sensitivity/responsivity with security over time. This effect reached significance at nine months only. Because these differences had not been present at one month, the investigators attributed them to learning rather than temperament. These results support those of Ainsworth et al (1978) and Main and Weston (1979) regarding the different interactional histories of infants later classified secure, avoidant and resistant in attachment, and of the contribution of maternal sensitivity/responsiveness to these.

The differential interactional histories and contribution of maternal sensitivity and responsiveness to attachment were supported by the results of Vaughn, Lefever, Seifer and Barglow (1989). These investigators used a prospective design to examine the role of infant temperament in attachment among 119 infant-mother dyads. Temperament was measured using the Infant Temperament Questionnaire-Revised (ITQ-R; Carey & Devitt, 1978) completed by mothers between five and eight months and the SS was used to measure infant attachment style between 12 and 14 months. Results showed that neither global ratings or subscales of infant temperament were associated with attachment classification, though variables of infant ‘difficulty’ and ‘energetic’ were associated with frequency of infant crying at separation and proximity seeking in the SS.

Weber, Levitt and Clarke (1986) used a concurrent design to examine the contribution of maternal and infant variables to infant attachment style in a sample of 36 white, middle class dyads. Infant and maternal temperament were measured using the Dimensions of Temperament Survey (DOTS; Lerner, Palermo, Spiro & Nesselroane, 1982), which was completed by the mother at around 13 months. Infant attachment was measured using the SS at approximately the same time. Analyses were made between
temperament and attachment, as a continuous and a categorical variable. Results showed
that maternal reactivity was associated with infant attachment classification, particularly
to the avoidant classification as described by Ainsworth et al (1978) and along the
continuum of B1-B3. Maternal adaptability was also associated with infant crying during
both separation and reunion, and with infant seeking of proximity at reunion. Infant
temperament showed little association to attachment behaviour or classification; however,
infant adaptability was related to behaviour toward the stranger. Global ratings of infant
difficulty were associated with distance interaction during preseparation with mothers,
resistance to mothers at reunion and negative interaction with the stranger at separation.
Overall, the investigators interpreted their results as supporting the dominant contribution
of interactional history to attachment, particularly maternal sensitivity and maternal
responsiveness. Unfortunately the concurrent measurement of independent and dependent
variables precluded the drawing of predictive inferences.

Crockenberg (1981) took a more comprehensive approach to the study of the
historical antecedents of attachment. She employed a prospective, repeated measures
design to investigate the contributions of maternal, infant and social variables in the
development of attachment. Variables of particular interest included maternal
responsiveness, infant irritability and social support. The sample used was 46
predominantly white, middle-class infant-mother dyads. Maternal responsiveness was
measured using behaviour rating scales on the basis of three and a half hours of home-
based observation at three months. Infant irritability was measured using a neonatal
behavioural assessment scale and social support was measured on the basis of interview
using content rating scales at three months. Infant attachment style was measured using
the SS at one year. Regression analysis showed that though maternal responsiveness was associated with security of attachment, the adequacy of a mother’s social support was the best predictor, above and beyond the effect of maternal responsiveness. Social support was particularly predictive of attachment quality in mothers with irritable infants, suggesting a buffering effect in the care of temperamentally difficult infants. The buffering effect of social support upon attachment appeared to function either through the medium of increasing maternal responsiveness or by providing alternative, responsive carers for the infant. Crockenberg suggested these results extended many previous ones, because they indicated it was not the adequacy of maternal sensitivity and responsiveness per se which determined later attachment, but the ‘goodness of fit’ between the maternal and infant variables of a given dyad over time.

A prospective, repeated measures design study by Mangelsdorf, Gunnar, Kestenbaum, Lang and Andreas (1990) followed on from the more complex study of Crockenberg (1981). These investigators recruited a white, middle-class sample of 66 infant-mother dyads to study relations between maternal and infant variables. These variables include maternal personality and infant proneness-to-distress, and infant attachment. At nine months a feeding and play instrument was completed by an investigator on the basis of home-based observation. Within one week of this observation and assessment of temperament and additional maternal behaviour scales were completed by the investigator on the basis of a standardised laboratory play session. Mothers also completed an (unpublished) personality questionnaire at the time of this assessment. At 13 months mothers completed the Toddler Temperament Scale (TTS; Fullard, McDevitt & Carey, 1984). Analyses were made of the independent variables against attachment as a
categorical and continuous variable. Results showed that none of the maternal or infant measures contributed to attachment classifications or to infant emotionality in the SS once infant temperament was controlled, an unexpected finding the investigators interpreted as due to insufficient observation of infant-mother interaction. However, there was evidence of more complex relationships between maternal personality variables and behaviour, and infant temperament. For example, maternal warmth, maternal sensitivity and support at nine months were associated with the maternal personality factor - positive affectivity - at 13 months, and these same maternal factors were associated with infant proneness-to-distress at nine months. Mothers high on negative affectivity also reported their infants to be more prone-to-distress than objective ratings made four months earlier, suggesting a contribution of maternal personality to perception of the infant. The investigators interpreted their results as supporting the more complex ‘goodness of fit’ model as proposed by Crockenberg (1981) between the characteristics of mother and infant, such that maternal personality and behaviour affected infant temperament, narrowing the range of environments in which a secure attachment relationship could develop. These results also pointed to the difference between the external, observable infant and the internal construction of the infant in the mother’s mind, and to the value of differentiating these.

Results of a meta analysis of 15 independent studies by Goldsmith and Alansky (1987) confirmed this more complex picture of the antecedents of infant attachment style and the need to go beyond the study of unidirectional effects of one of the partners upon the other, to the transactional variables which had also been a feature of the original study by Ainsworth et al (1978). Maternal sensitivity was found to have a weak, predictive
association to infant attachment classification. Though infant temperament did not show a predictive association with attachment classification, it did show a weak predictive effect upon resistant behaviour in the SS.

Hence, in recent times there has been growing recognition of the importance of early transactional variables in the development of attachment and in other infant psychological and social domains. Significant developments in theory have been made on the basis of observations of these transactional variables in infant-mother interaction both within the attachment tradition and outside of it (Brazelton & Cramer, 1991; Emde et al, 1993; Sandler & Sandler, 1978; Stern, 1985).

3.3 Methodological issues in the study of infant-mother relationships

The shift of focus toward the study of transactional variables in the infant-mother relationship has raised a number of methodological issues. Firstly, because of the contingent nature of these phenomena, data cannot be derived from one or other partner alone. This has led to the development of a research paradigm in which here and now interaction within the dyad and sequences of exchanges, have become the subject of study. Secondly, because naturalistic phenomena are being studied it is important to minimise the effect of confounds which might distort the transaction. Hence, both home-based and laboratory-based observation paradigms have developed, both of which emphasise preservation of conditions under which the transaction usually occurs. Thirdly, because the phenomena being studied are complex investigators must utilise detailed, systematic forms of measurement to attain accurate records which can be compared across studies. For this reason behaviour ratings and frequency counts of substantial
samples of infant-mother interaction are required to help ensure the reliability and validity of the observations. A number of instruments have been developed to help systematise measurement in this area, including behaviour rating checklists which are completed during the observation, and interaction scales which are completed by the observer after the observation. One of the constructs which has been useful in recent work has been ‘interactional synchrony’. The utility of this construct rests upon the fact that it operationalises aspects of the ‘goodness-of-fit’ between infant and mother, can be utilised in naturalistic settings without requiring direct intervention by the observer, and enables a rigorous approach to measurement.

3.4 Recent studies of infant-mother interaction - interactional synchrony

Isabella, Belsky and von Eye (1989) set out to examine the association between interactional synchrony, defined as the complementariness of infant-mother interaction and attachment. They studied a sample of 30 white, middle-class infant-mother dyads from a larger prospective study using a repeated measures design. Frequency counts of behaviours along 14 dimensions were made every 15 seconds during 45 minute home-based observations at one, three and nine months. This yielded classifications of synchronous interaction in which infant and mother engaged in reciprocal, mutually rewarding exchanges (eg infant vocalises, mother smiles, mother makes eye contact, infant smiles), asynchronous interaction in which one-sided, unresponsive or intrusive exchanges occur (eg infant closes eyes, mother raises voice and begins to poke infant) and neutral interaction which is neither synchronous or asynchronous (eg infant sleeps, mother attends). Infant attachment was measured using the SS at around 12 months of
age. Significant associations were found between interactional synchrony at one and three months, and attachment classification. A model including terms for synchronous and asynchronous interaction and attachment was significant, accounting for 62% of the variability in interactions at one month and 56% of the variability at three months. When the synchrony variable was differentiated further, predicted associations were evident.

Mothers of infants who later developed secure attachments more often responded to their infants’ vocalisations at one, three and nine months; and soothed their crying infants at one and three months; and these dyads were more likely to engage in complex turn-taking exchanges involving responsiveness of both infant and mother. Mothers of infants later classified as avoidant more frequently vocalised almost without regard to the infants’ cues at one, three and nine months; rarely in response to the infant at one and three months; and more often provoked their infants into exchanges at nine months. Mothers of infants later classified as resistant showed less frequent mutual or reciprocal exchanges across all time points, through directing interactive behaviours toward inactive infants or failing to respond to their active infants. However, these mothers more frequently soothed their infants than expected. Ratings of synchrony were not associated with degree of time infants spent sleeping. The investigators interpreted their results as supporting the Ainsworth et al (1978) findings regarding the early interactional histories which led to attachment security, and regarding the differing types of insecurity. Secure attachment appeared to be fostered by a synchronous interactional history in which mothers were relatively consistent in their perceptions, accurate in their interpretations, timely and appropriate in their responses to infant signals. Avoidant attachment appeared to be fostered by overstimulating and intrusive interactions; and resistant attachment by
understimulating or mismatched interactions. Failure to obtain group differences at nine months on some measures was attributed to the greater sensitivity of the instrument at one and three months. However, because less secure infants (B1 & B2) had been excluded from the analysis, questions regarding the bias of the sample toward more secure infants had to be addressed.

In a replication study Isabella and Belsky (1991) recruited 153 primiparous white, middle and working class infant-mother dyads. Dyads were observed for 45 minutes in the home at three and nine months, with frequency counts of behaviours made every 15 seconds, and infant attachment was measured at one year using the SS. In order to test the hypothesis of synchrony being associated with security of attachment, the investigators returned to the original 1989 sample and re-analysed results with the B1 and B2 infants included in the analysis. In the 1989 sample results showed that when these ‘less secure’ infants were included synchrony continued to be significantly associated with security of attachment, with 58% and 59% of interactions at three and nine months respectively being predicted by the model. When the same analyses were made of the current sample, 54% and 52% of interactions at three and nine months respectively were predicted by the synchrony model. In addition, a model predicting differential interactions between secure, avoidant and resistant dyads was also significant accounting for 62% and 65% of interactions at three and nine months respectively. As predicted, mothers of infants who were subsequently classified avoidant were found to vocalise in a relatively continuous, non-contingent manner while failing to respond to their infant’s vocalisations. Mothers of infants who were subsequently classified resistant were found to show poorly coordinated interactions and minimal maternal involvement when infants
vocalised and/or looked at them. These results supported those of Ainsworth et al (1978) regarding differential interactional histories of secure and insecure infants. Secure infants more often had synchronous and insecure infants asynchronous (extreme over- or under-involvement) interactional histories; and that avoidant infants more often had maternal underinvolvement and inconsistency. On the basis of these results they postulated that avoidance might develop as a strategy to protect the self from the mother’s insensitive forays into the infant’s experience, while resistance might reflect the infant’s strategy for seeking to elicit consistent and predictable maternal involvement.

Though study of this transactional construct has proved illuminating, the labour intensiveness of a frequency count derived measurement prompted some investigators to develop instruments which would enable parsimonious but reliable and valid measurement of interactional synchrony. Unfortunately most of these have measured the infant and mother contributions to the interaction independently, then summed these, such as for the Monadic Phase Scale (MPS: Tronick, Als & Adamson, 1979), the Dyadic State Code (DSC; Bakeman & Brown, 1977) and the Dyadic Harmony Scale (DHS; Biringen, 1990). One instrument, the Dyadic Mutuality Code (DMC; Censullo, 1994a; 1994b), goes some way to measure the mutuality of the interaction.

On the basis of reviews of the literature on transactional infant-mother variables Censullo defined synchrony as “a joint action, coordinated behaviour in which changes co-occur, behaviours of the individual members converge and they move to higher levels of energy, attention and affect” (1987, p244). She developed the DMC, a six item global behaviour rating scale for the measurement of these dyadic interchanges between young infants and their caregivers. Items measure mutual attention (Brazelton, Koslowski &
Main, 1974), positive affect (Stern, 1974), maternal pauses and turn-taking (Stern & Gibbon, 1979; Tronick, Als & Brazelton, 1977), infant clarity of cues (Sandler, 1969) and maternal sensitive responsiveness (Schaffer, 1980). The instrument is scored on the basis of observation over a set period and leads to classifications of level of synchrony.

Preliminary studies in which the DMC has been used suggest it has psychometric merit and point further to the role of synchrony as an index and promoter of adaptive infant-mother relations. These are described below.

Censullo, Bowler, Lester and Brazelton (1987) used a test-retest design to examine synchrony as a construct and the psychometric properties of an early version of the DMC in a convenience sample of 20 preterm and 20 full term white, middle-class dyads. Infant-mother dyads were observed in a laboratory setting at three and five months of age for three minutes (preterm infants were corrected for gestational age). Both the MPS (Tronick et al, 1979) and the DMC were scored. Interrater reliability derived from the five month observations was high, with .89 for mutual attention, .82 for positive affect, .85 for turn taking, .87 for maternal pauses, .97 for infant clarity of cues, .96 for maternal sensitive responsiveness; and .89 for the total score. Item discrimination derived from comparisons of subjects who were preterm and subjects who were fullterm was acceptable, with discrimination of .95 for mutual attention, .87 for positive affect, .76 for maternal pauses and .76 for maternal sensitivity. Turn-taking and infant responsivity were moderate to low at .48 and .19 respectively. Concurrent validity derived from comparisons of MPS and the DMC was significant, showing a moderate correlation of .49, which was acceptable given that the former instrument measures independent behaviours of infant and mother, while the latter measures synchrony. The prevalence of
low synchrony (total score of nine or less) in the full-term and pre-term subgroups was 17% and 55% respectively. The investigators suggested that the DMC showed adequate psychometric properties and showed promise as a research instrument.

In a pilot study Censullo (1994a) used a pre-test and post-test design with a convenience sample of 12 adolescent parents (nine mothers and three fathers) and their four month old infants to examine the effect of interaction coaching upon parental responsiveness, self esteem and confidence. Prior to and following the intervention, the investigators scored the revised DMC on the basis of a period of observation of each dyad. Additionally, parents completed a self-estee scale and a parental self-efficacy measure (Sirigano & Lachman, 1985). The intervention involved three sessions of psychoeducation, coaching and guided practice in parental responsiveness over a four week period. Results showed significant improvements in overall parental responsiveness, and these were associated with improvements in parental self-esteem and confidence after the intervention. These results were not generalisable because of the sampling bias and lack of a control group. They did, however, provide preliminary evidence of the usefulness of targeting synchrony in the promotion of adaptive infant-parent relations among at-risk groups, and of efficacy of the instrument in such work.

This work has been replicated and extended in clinical settings in the cross-sectional, multi-study 'Positive Parenting Program' (PPP) initiative by the Department of Health and Community Services in Melbourne, Australia (Smith, Whitfield, Duff & Morrison, 1997). The PPP has been aimed at facilitating the development of adaptive infant-parent relationships in at-risk populations including premature, low-birth weight and difficult-to-settle infants. Ten groups of between four and eight families each have
participated in a 10 week group-based program in which parents have been offered psychoeducation, peer support, coaching and practice of responsiveness and play, under the guidance of specialist staff. Evaluation of the program has been made using a pre-test and post-test design in which the DMC, Bayley Scales of Mental Development (BSMD; Bayley, 1969), EPNDS (Cox, et al, 1987) and Smith Life Events Questionnaire (SLEQ; Smith, 1994) have been administered. Though results are unpublished; anecdotal evidence (Smith & Whitfield, personal communication, 1998) suggests that the PPP has been associated with significant improvements in synchrony across almost all groups, and that synchrony has been positively associated with the infant mental development index of the BSMD and maternal post-partum mood. This preliminary work may provide further support for the importance of early infant-parent synchrony in the interactional history of adaptive infant development and of the suitability of the DMC in measuring this.

3.5 Summary

There is compelling evidence to suggest the association between early interactional history and achievement of the first developmental task of infancy, attachment. Though maternal variables such as maternal responsiveness appear to make a greater contribution to this interaction, models in which both maternal and infant variables are included better predict attachment outcomes. However, even with the inclusion of maternal and infant variables, the predictive power of these models is limited. Recent developments stress the importance of going beyond the study of empirically-derived variables and unidirectional effects, to the transaction between infant
and caregiver and to theoretically meaningful and well defined constructs such as interactional synchrony. Preliminary evidence suggests that early interactional synchrony is a valid construct which accounts for greater proportions of the variance in later infant attachment than other variables, and may be associated with other indices of adaptive infant development.
CHAPTER 4 INFANT-MOTHER RELATIONSHIPS - THE

MATERNAL EXPERIENCE

4.1 History of the study of the maternal experience of the infant-mother relationship

In the context of longstanding focus upon the infant experience of the infant-mother relationship as evident in behaviour, and increasing acknowledgement of the value of subjectivity in research, there has been a systematic change in the course of research during the past two decades. This change has occurred in subject, level and method of measurement. Firstly, interest has turned to the maternal processes contributing to the developing relationship. Secondly, the role of subjectivity and higher-order cognitive capacities of adults in comparison to infants, has led the subject of measurement to shift from the level of behaviour to the level of representation. Thirdly, consistent with the shift of subject, observational methods have largely been replaced by discourse or thematic analysis of interview material. It has been repeatedly suggested that these developments reflect a convergence between the interests of empiricist scientists and clinicians working in the field of infant-parent relationships (George, Kaplan & Main, 1985; Haft & Slade, 1989; Seligman, 1991; Stern, 1985; 1991; Zeanah & Barton, 1989; Zeanah, Zeanah & Stewart, 1990). This convergence is reflected in the combining of concepts and methods associated with contemporary empiricist science, epitomised by the first and second stages in the evolution of attachment theory, and those of hermeneutic approaches, epitomised by the experiential, case-study focus of psychodynamic approaches (Bretherton, 1990; Collins & Read, 1994; Diamond & Blatt,
1994; Fonagy, 1996; Haft & Slade, 1989; Holmes, 1993; Levine & Tuber, 1993; Levine,

In the attachment tradition the recent focus upon the representations which
Bowlby (1973) originally proposed to underly styles of infant attachment behaviour, has
heralded the third stage in the development of theory. In this stage, the meaning of well
documented patterns of behaving and relating have begun to be systematically explored.

In the psychodynamic object relations tradition, where representations of experience have
long been central to theory and clinical practice, there has also been more systematic
study of representational constructs. By combining hermeneutic and empirical study
methods, these research efforts have begun to contribute meaningfully to the small but
growing empirical base. As Zeanah and Barton (1989) suggest,

“It seems increasingly clear that what is crucial to understanding
infant-parent relationships is not an interactive pattern itself, but
rather what is communicated and experienced within that pattern
about the caregiving relationship, the self and the other.” (p136)

Across both traditions representational phenomena are conceptualised similarly.
The are proposed to be the conscious and unconscious mental representations of
experience to which particular qualities of cognition, affect and behaviour are attached.

They are powerful frameworks through which ‘objective’ events are ‘subjectively’
experienced, interpreted and responded to. The power of this subjective framework can
create differences between ‘subjective’ or ‘experienced’ and the ‘objective’ events, with
the 'experienced' events often resonating with the past. For example, a parent may experience an infant in terms of his or her own previous relationships with a significant other, regardless of the individuality and uniqueness of the infant. The degree to which these representations enhance or distort the development of an authentic relationship between infant and parent turns upon their content, coherence and flexibility, and the level of self-awareness the parent possesses about them and their effect in the here-and-now. The level of resilience in the infant and broader environment will also have some effect. Finally, because representations mediate the maintenance and change of conceptions of self, other and patterns of relating, they are the level at which intervention must be aimed to achieve lasting change. Representations have generally been operationalised as 'internal working models' in the attachment tradition and (variously) as 'object relations' (Klein, 1932), 'internal role relationships' or 'experiential representations' (Sandler & Sandler, 1978; Sandler, 1987); 'sense-of-self-in-the-relationship', (Stern, 1985), and 'schemas-of-self-with-other' (Stern, 1991). Such is the importance of internal representations in clinical work that some clinician-researchers have attempted to conceptualise therapeutic interventions from a range of traditions according to the degree to which they are aimed at the representational level (Levine & Tuber, 1993; Stern-Brusheweiler & Stern, 1989). As a result there has been an increasing interest in developing instruments of measurement (Zeanah & Barton, 1989).

As the emphasis in this thesis is upon internal representations as an overarching concept common to many theoretical perspectives, the research to be described next will be drawn from the two traditions in which most such research has been done, the attachment and psychodynamic object relations traditions. First, an overview of
measurement issues will be given followed by outcome data relating to parental, particularly maternal, internal representations of the infant, self-as parent and the infant-parent relationship.

4.2 Measuring maternal representations of the infant-mother relationship

Among the methods developed to measure maternal representations, the most promising have been based upon content analyses of verbal transcripts, usually derived from semi-structured interviews. This method is most consistent with the subject of measurement, because it enables the investigator to clearly establish or infer the unique meaning of particular experiences and events for the individual. Considerable data have been amassed to support the efficacy of taking a content- or thematic-analysis approach to the measurement of representational experience. Most of these data have been derived from studies of the Adult Attachment Interview (AAI; Main, Kaplan & Cassidy, 1985). However, limited data regarding another content analysis-based instrument, the Krohn Object Representational Scale for Dreams (KORSD; Krohn & Mayman, 1974) provide additional evidence of the efficacy of this approach (Levine & Tuber, 1993; Levine et al, 1991).

Main, a clinical psychologist colleague of Mary Ainsworth, proposed that the organisation of discourse regarding attachment-related experiences in adults could, like the behavioural organisation of infants, be viewed as a reflection of the organisation of their internal representations regarding attachment. The AAI is a structured interview which elicits a standardised discourse regarding early attachment experiences from older adolescents and adults. Internal representations associated with the following experiences
are sampled, a) descriptions of early attachment relationships, b) specific memories in support of these descriptions, c) descriptions of experiences in which minor injuries, illnesses, separations, rejection or harsh treatment featured and d) assessment of the effects of early attachment experiences upon current personality and parenting. Verbatim transcripts of the protocol are coded along a number of dimensions including the adherence to or violation of formal properties of coherent, collaborative discourse as identified by linguistic philosopher Grice (1975) (quality, quantity, relation, manner). This coding yields four possible classifications of the individual’s ‘state of mind’ regarding attachment and the classification system as a whole functions as a “taxonomy of mental representations” of attachment (Sperling, Berman & Fagan, 1992, p241).

Approximately 60% of the original white, middle-class sample of Main and Goldwyn provided a collaborative-coherent discourse characterised by objectivity, coherency and internal consistency. In content terms these people recognised the significance of attachments and showed a capacity to acknowledge their experiences regardless of the content, without the need to resort to defensive measures such as denial or idealisation. This style has been termed “A” or autonomous and appears to reflect a system of internal representations which is organised and in which there is relative consistency within and across representational levels (Bretherton, 1990).

Approximately 30% of the sample provided transcripts which violated the maxims of quality and quantity because they were notably brief, punctuated by lapses in autobiographical memory, and were often delivered with restricted affect. In content terms, these people appeared to deny the significance of attachment relationships and presented an idealised description of their early attachment history in which negative
experiences and associated affects were defensively denied. However, they either could
not provide evidence for their idealised descriptions or directly contradicted these. This
style has been termed "D" or non autonomous-dismissing. This approach appears to
reflect a system of internal representations in which there is compartmentalisation within
a representational level or across representations, leading the activation of one
representation to have no effect upon another (Bretherton, 1990).

Approximately 10% of the sample provided transcripts which violated the
maxims of manner and relevance because they were notably lengthy and rambling, and
were characterised by a feeling of being flooded by affective states, particularly anger.
These people appeared to overstate the significance of attachment relationships and to be
overwhelmed by a continuing intense dependence upon and involvement with, their early
attachments. This style has been termed "E" or non autonomous preoccupied. This
approach appears to reflect a system in which there is difficulty generalising from
autobiographical memories to abstract representations (Bretherton, 1990).

A small proportion of adults provided transcripts in which there were clear lapses
in the monitoring of reasoning or discourse. These lapses were postulated to be derived
from the interference of previously dissociated memory systems, the content of which
suggests a lack of resolution of mourning evident through the tendency to assume
inappropriate blame such as for abuse or a death, or by showing ongoing fear of an
previously abusive parent. This style has been termed "U" or unresolved and, like the
disorganised-disoriented infant classification, can accompany any of the three main styles
(A, D, E).
Main and others (Grossman, Femmer-Bombik, Rudolph & Grossman, 1987; Main, Kaplan & Cassidy, 1985) suggest that these characteristic attachment-related internal representations are conceptually linked to characteristic attachment behaviour styles in infants. These researchers propose that parents classified autonomous are likely to have children classified secure; parents classified dismissing are likely to have children classified avoidant; parents classified preoccupied are likely to have children classified resistant; and parents classified unresolved are likely to have children classified disorganised-disoriented.

Similarly, the KORSD was developed by psychodynamically-oriented researchers to “assess the level of maturity of object-representations as reflected in the depiction of human figures in written dream reports” (Levine et al, 1991, p 456). Like the AAI, verbatim transcripts, in this case of dreams, are scored along particular thematic dimensions leading to inferences regarding the classification of object relatedness along a continuum from primary narcissism to empathic object relatedness. The following outline of levels of classification derived from the instrument is drawn from Levine and Tuber (1993).

At the highest level (8) the individual has a well-developed understanding of his or her own and others’ thoughts, feelings and conflicts. These are flexible and open to disconfirmation. The person has generally strong interpersonal relations.

At the next level (7) the individual is sensitively aware of others’ experiences and variations but neurotic conflicts cause these to be experienced in infantile and transferential ways.
At the next level (6) the individual has a reasonably differentiated sense of others but has difficulty understanding other's inner experiences. This enables more intimate involvements to be avoided.

At level five (5) the individual experiences others lacking clear identity and definition, and as interchangeable rather than unique and dynamic entities.

At level four (4) the individual experiences others exclusively in terms of whether they can gratify needs in he or she or whether he or she can gratify the needs of the individual.

At the third (3) lowest level the individual experiences others as fluid and interchangeable, lacking in meaningful integration.

At the second lowest level (2) the individual experiences others as not human, but rather, as cold, mechanical, malevolent and potentially murderous.

At the lowest level (1) the individual experiences the world as alien, unpredictable and lifeless, as either stark and static or fluid and lacking definition.

4.3 Psychometric properties of these instruments

To date considerable psychometric evidence has been accumulated to support the reliability and validity of these constructs, most of which is derived from the attachment literature. Reviewers of this literature note that classifications of attachment representations derived from the AAI have been found to be stable over a 15 month period (Bakermans-Kranenberg & van Ijzendoorn, 1993). Preliminary longitudinal studies of at-risk and white, middle class families suggest a strong association between the classification of attachment behaviour in the infant (derived from the SS) and the
subsequent classification of attachment representations in the infant-turned-adolescent (derived from the AAI) (Main 1996). These classifications have been found to be unrelated to intelligence, social desirability (Crowell, Waters, Treboux, O'Connor, Colon-Downs, Feider, Golby & Posada, 1996) or general psychosocial adjustment (Zeanah, Beniot, Barton, Regan, Hirshberg & Lipsitt, 1993).

The concurrent validity of classifications of attachment representations has generally been examined through concordance studies of infant-parent dyads in which infant attachment behaviour has been measured using the SS and parent attachment representations have been measured using the AAI. Concordance has been found to be high whether measured retrospectively (Grossman et al, 1988) or concurrently (Ainsworth & Eichberg, 1991; Beniot & Parker, 1994; George and Solomon, 1989; 1996; Zeanah et al, 1993). Prospective studies in which the AAI has been administered to pregnant women and the SS to their infants in the post-partum, have also shown significant concordance (Beniot & Parker, 1994; Fonagy, Steele, Steele, Moran & Higgitt, 1991; Steele, Steele & Fonagy, 1996), providing some predictive validity data. High levels of concordance have been found to hold whether comparisons are based upon 2 way classifications (secure/autonomous vs insecure/non-autonomous) or 4 way classifications (secure/autonomous vs insecure-avoidant/non-autonomous dismissive vs insecure-resistant/non-autonomous preoccupied vs insecure-D/non-autonomous unresolved) (Steele, Steele & Fonagy, 1996). In a recent meta analysis of 14 concordance studies in which three way classifications were used, concordance was estimated to be between 70%-75% (van Ijzendoorn, 1995). Though the use of 'matched' constructs, instruments and classification systems derived from the attachment tradition, particularly
in the absence of alternative criterion measures, must be acknowledged as potential confounds, the weight of the data and size of the effect is compelling. Emerging if limited data from studies in which other instruments and systems of classification have been used in the measurement of internal representations, such as the KORSD, support the validity of this attachment-derived literature.

Though the KORSD was developed for non-specific use and most of the research to date has been done with adult rather than parent populations, psychometric outcome data obtained to date have been consistent with those derived from the AAI. There is some evidence of the criterion-related validity of the KORSD with other measures and instruments including early memories, the Rorschach Inkblot Test (Rorschach, 1942) and clinical assessment (Krohn & Mayman, 1974). There is also some evidence that KORSD classifications discriminate character styles of patients given a borderline diagnosis (Spear, 1980). Finally, in another study, classifications predicted global improvement and level of object relations on termination of psychotherapy (Friestwyk & Colson, 1980).

The only study in which the KORSD has been applied with parent populations suggest that its psychometric properties may hold with these groups and that it may be empirically linked to the AAI. Levine et al (1991) aimed to study the association between the concepts of internal working models and object relations. They employed a prospective design in which 42 adolescent infant-mother dyads of predominantly African-American ethnic origin were administered the AAI and the infants were administered the SS at 15 months. The KORSD was scored independently on the basis of AAI transcripts. Results showed that level of object relatedness was significantly and strongly associated with AAI classification. Both object representation and AAI classification were
significantly associated with infant SS classification. Though these results were as predicted and supported both the criterion-related validity of the KORSD and the predictive value of internal representations, the use of AAI transcripts to derive KORSD classifications may have confounded results. Hence, replication of these results with this confound addressed, is required. During the last decade there has been a growing interest in examining the mechanisms through which internal representations of mothers regarding the infant, self-as-mother and the infant-parent relationship influence parenting approach and behaviour.

4.4 Mechanisms which mediate maternal internal representations

A number of researchers and clinicians have postulated the likely mechanism through which maternal internal representations of infant, self-as-parent and the infant-mother relationship may impact upon mothering approach and behaviour. These draw upon both the defensive exclusion hypothesis as initially advanced by Bowlby (1975) and the metacognitive monitoring hypothesis recently described by Main (1991).

Initially, Bowlby hypothesised that because the representations about attachment relationships in the mother guide what she expects, recognises and can tolerate in a significant relationship, she will come to expect, recognise and tolerate only these experiences in the infant. This selective attending to and reinforcing of, particular emotional states, behaviours and patterns of interaction was proposed to encourage the infant to develop in ways similar and/or acceptable to, the mother.

Recently Main has suggested that it is not cognitive but metacognitive processes, differentiated as “thinking vs thinking about thought” (1991, p128) which heavily
mediate the quality of one's representational system. Main contends that it is not (objective) experiences which best predict functioning but the (subjective) way in which these are represented in the mind including more subtle dimensions of flexibility and coherence within and across representations, and capacity to reflected upon these. For example, Main suggests that the mother who denies the death of her husband and tells her six year old child he is holidaying, encourages in the child a twofold vulnerability. The child is led to develop two different and mutually exclusive representations of the experience (a. daddy has died vs b. daddy has gone on a holiday and will be back) causing inconsistency across representations. Additionally, children under six years are not readily able to make what Main terms the 'appearance-reality distinction' (i.e. to test the validity of their own and others' representations of experience against reality). Hence, he or she will not be able to differentiate reality-as-it-appears via the distortions of mother and reality as it actually is (i.e. mummy says daddy has gone on holidays but that is because mummy misses daddy now he's dead). Main contends that systematic deficits and biases in metacognitive functioning of this type lead to the characteristic forms of discourse detected by the AAI, and which are classified as reflecting different states of mind regarding attachment. Fonagy and colleagues (Fonagy, 1996; Fonagy, Steele, Steele, Higgitt & Target, 1994; Fonagy et al, 1991; Steele et al, 1996) have extended Main's (1991) hypothesis by proposing the central feature of these metacognitive processes to be the 'reflective self function', defined as the capacity to consider the mental state of the other when considering and planning actions. These investigators have developed a set of criteria characterising the reflective self function which can be scored on the basis of an AAI transcript but which cut across the existing subscales. Preliminary
empirical work suggests scores on this subscale in the transcript of a caregiver are more highly correlated with attachment style of the infant than any AAI subscale (Fonagy et al., 1994). The size of this effect is substantial, with parents rated high on reflective self function three to four times as likely to have children with secure attachment styles as those rated low (Fonagy, 1996; Fonagy et al, 1994). There is some evidence that this effect holds in at-risk samples. Despite significant deprivation, mothers who showed high reflective self functions have been found to have children who were securely attached (Fonagy, 1996; Fonagy et al, 1994). Preliminary study of the associations between maternal representations, again, generally measured by the AAI, and maternal behaviour, cognition and affect in relation to the infant are consistent with these hypotheses.

Crowel and Feldman (1989) concurrently studied the relationship between mothers’ representations of attachment, their mothering behaviour and their children’s attachment behaviour. Fifty-one infant-mother dyads were recruited from clinical and community populations when the children were between 24-54 months. Mothers were administered the AAI then infant-mother dyads were observed in a semistructured laboratory play session. This yielded ratings of mothers’ parenting behaviour and of child behaviour. Significant associations were found between mothers’ AAI classifications and mothers’ behaviour in the laboratory, namely, mothers in the preoccupied and detached groups were significantly less supportive and helpful than secure mothers. The greater majority of secure mothers approached tasks in a way which promoted learning and discovery, most detached mothers were directive and controlling and most preoccupied mothers were either confusing or controlling with the child.
The results were supported in a subsequent study by Crowel and Feldman (1991) in which the responsiveness of mothers to their infants during separation was concurrently studied. A sample of 45 white, middle class child-mother dyads was used, drawn from clinical and community populations and matched on demographic variables when the children were between 25 and 50 months. Mothers were seen with their children in a laboratory separation-reunion task then were administered the AAI. Significant associations were found between mothers’ attachment classifications and mother behaviour at separation, mother behaviour at reunion, and with child behaviour at reunion. These associations were found to be independent of child clinical status. Autonomous mothers were found to be affectionate, prepared their children well for separation and approached their children on reunion. Dismissing mothers left their children without difficulty and with less preparation than did autonomous mothers. On reunion the mothers remained physically distant and their children showed avoidance of eye and verbal contact. Preoccupied mothers were anxious and showed difficulty leaving, tending to prepare their children the least for this. At reunion both mothers and children avoided physical and eye contact. These data are consistent with both the defensive exclusion (Bowlby, 1975) and metacognitive coherence (Main, 1991) hypotheses regarding the way in which maternal representations may influence maternal approach and behaviour.

A study by Zeanah et al (1993) contributed to data regarding maternal behaviour, by concurrently examining the maternal cognitions, specifically the associations between parental attachment representations, infant attachment behaviour and maternal interpretation of infant behaviour. They recruited 60 infant-mother dyads from middle-
class, community populations when the infants were around 12 months. Adult attachment representations were measured using the AAI, infant attachment behaviour was measured using the SS, maternal interpretation of infant response to separation-reunion experiences was assessed using the Description of Child Behaviour Questionnaire (DCBQ; Zeanah & Barton cited in Zeanah et al, 1993) on the basis of SS videotapes and maternal interpretation of infant emotion was also assessed using an unpublished instrument. Only results relevant to this thesis are reported here. Maternal AAI classification was systematically associated with maternal perception and interpretation of infant emotion and behaviour. Dismissing mothers rated the videotape of their infants as less positive and more negative than autonomous mothers and as less positive than preoccupied mothers. Preoccupied mothers rated the videotape more positively than either secure or dismissing mothers. These data regarding maternal cognitions are consistent with the data previously reported regarding behaviour.

A study which attempted to explore some affective correlates of these behaviours and cognitions was made by Haft and Slade (1989). These investigators recruited a sample of 14 infant-mother dyads when the infants were between 10-13 months. Using a concurrent design they investigated the relationship between mothers’ capacities to access their own early affects and experiences and their acknowledgment and attunement to affects and experiences in their infants. The dyads were videotaped in a laboratory playroom on two occasions separated by two weeks. The AAI was administered to the mother on the second occasion. Mothers later returned to view the videotapes and to explain their experiences of the affective attunements they shared with their infants. Descriptive and qualitative analyses were presented because of the small sample size.
Overall, attunements were found to differentiate the mother AAI classification, with autonomous mothers evidencing the highest level of affect attunement, followed by dismissing and preoccupied mothers in the free play situations. During reunion secure mothers used low-level attunement least often, followed by dismissing and preoccupied mothers. Misattunements were also found to differentiate the AAI groups with autonomous mothers misattuning rarely and without systematic bias of one affect over another while dismissing mothers systematically misattuned to negative affect and preoccupied mothers misattuned unpredictably and in a range of contexts. The investigators suggested that their results were evidence that mothers misattune to affects which most threaten their own states of mind regarding attachment.

The results of Haft and Slade (1989) received limited support from a larger and more recent retrospective and concurrent study of affect made by Glachan and Ney (1995). These investigators examined the association between mothers’ self-reports of early attachment experiences, their adult attachment styles and management of negative emotional states in the infant-mother relationship. They recruited 140 predominantly white, middle-class, first-time mothers and their infants when the infants were aged between one and eleven months. The Parental Style Descriptions instrument (PSD; Hazen & Shaver, 1987) was used to measure retrospective accounts of early attachment experiences. This instrument presents a set of descriptions of parenting styles associated with each infant attachment style and respondents are asked to rate the degree to which each characterises his or her early attachment experiences on a Likert scale. A brief self-report adult attachment scale (Collins & Read, 1990) was used to measure adult attachment. Maternal and infant negative emotional states and maternal coping styles
were measured using interviews and questionnaire. Though a number of results were obtained, only those relevant to this thesis will be reported here. The strategies mothers used to deal with negative emotional states in themselves and their infants were only selectively associated with their adult attachment profiles. Specifically, mothers who believed they could not depend on others were more likely to use withdrawal to cope with their own distress and less likely to use comforting to cope with the distress of the infant. Mothers' retrospective accounts of their early attachment experiences were not associated with perceived levels of distress in themselves or their infants, nor with the coping styles they used to manage these. These results are difficult to compare with those previously mentioned for a number of conceptual and methodological reasons. The construct of adult attachment style was conceptualised along the dimensions of dependency, closeness and anxiety, the instruments used were self-report descriptive or questionnaire rather than observational or interview-discourse based, the classification system yielded continuous rather than categorical material, one of the instruments was exclusively retrospective and the emotional states examined were limited. Hence, the reliability of these results and validity of comparisons with studies of maternal representations of attachment, may be questionable.

Despite the consistency of these data, the predominance of concurrent measurement of variables in these studies precluded drawing inferences regarding causality. However, some studies have attempted to address in more detail the complexity of this association through prospective research designs, beginning during pregnancy. The studies in which this line of research has been pursued suggest that the characteristic
way parents relate to, think and feel about their infants may begin developing as early as pregnancy.

Zeanah, Keener, Stewart and Anders (1985) employed a prospective design to study the relationship between parents' internal representations of their infants at ante- and post-natal points, and between parents' representations and subsequent infant behaviour. They followed 38 primiparous, middle-class couples from pregnancy to six months post-partum. Parents' representations of their infants were measured using the Infant Temperament Questionnaire (ITQ; Carey & Devitt, 1978) at 32 weeks, 36 weeks ante-natally; one month, six months post-partum, and semi-structured interview at eight months ante-natally and one month post-partum. Results showed that parents developed stable perceptions of their infants' temperaments during the ante-natal period, with five of the six temperament dimensions shown to be significantly stable. Parents' ante-natal ratings of temperament were also significantly associated with post-partum ratings as far as six months, suggesting that parents developed a bias about their infants' temperament during pregnancy which was maintained in early infancy. Because objective measurement of infant behaviour was not made, it was not possible to examine the relationship between parental representations and infant behaviour. The investigators noted that the representations of mothers and fathers varied throughout the timeframe of measurement, suggesting these had been based upon idiosyncratic subjective bias rather than stable objective cues from the foetus or infant.

A more complex subsequent study by Wolk, Zeanah, Coll and Carr (1992) built upon the results of Zeanah et al (1985). This study was designed to examine the relationships between ante-natal parental characteristics, laboratory assessment of infant
temperament and parental perceptions of infant temperament at three months post-partum. Forty four primiparous, middle-class couples were administered the IPAT Anxiety Scale (Krug, Shreier & Cattell, 1976), the Parental-Fetal Attachment Scale (PFAS; Cranley, 1981), the Infant Characteristics Questionnaire (ICQ; Bates, Freeland & Lounsbury, 1979) and Scale of Infant Temperament and Activity (SITA; Zeanah, Carr & Wolk, 1990) between 32-33 weeks ante-natally. At three months post-partum parents completed post-natal versions of the infant temperament scales and infants were administered a standardised laboratory assessment of temperament. Results showed little convergence of parental perceptions of the unborn baby prior to birth, but significant convergence at three months post-partum. Parents’ perceptions of infant temperament at three months was also significantly convergent with laboratory-based assessment. Ante-natal age, quality of attachment to and perceptions of the unborn baby were significantly associated with ratings of infants’ temperament post-natally. Additional variance in parental perceptions was accounted for by the laboratory assessment, even when the effect of ante-natal parental characteristics was removed. The investigators interpreted these results as supporting the hypothesis that both parental subjective perceptions and representations and objective infant behaviour made significant and independent contributions to parents’ perceptions of infant temperament at three months.

The unique experiences underlying these types of large scale group comparisons were elaborated by Slade and Cohen (1996), who presented three case studies from a longitudinal study of 66 middle-class, well educated women from pregnancy through the first two years post-partum. These investigators examined the association between maternal internal representations and subsequent infant-mother experience. The women
were administered the Pregnancy Interview (PI; in Slade & Cohen, 1996) and the AAI during the third trimester. At 10 months post-partum infant-mother interaction was videotaped and the Parent Development Interview (PDI; Aber, Slade, Berger & Kaplan, 1985) scored on this basis. At four months post-partum the SS and the AAI were administered and at 28 months the PDI was readministered. Case-study analysis suggested that maternal representations of attachment were associated with capacity to think about the baby during pregnancy. The mother classified autonomous was able to imagine the baby in a rich, textured and elaborated way; the mother classified dismissing had 'closed' fantasies about having a calm, compliant baby and the mother classified preoccupied had 'closed' fantasies about having a wild, uncontrollable baby. Adult attachment classifications were also consistent with observed infant-mother relations at 10 months. The autonomous mother could experience and reflect upon the pleasure and pain of having an infant and of the infant’s experience; the dismissing mother became irritated and withdrawn when her infant became normally needy and demanding and the pre-occupied mother became surprised and suspicious of her infant’s fun and responsiveness. Each of the women’s descriptions of her relationship with her baby was reminiscent of her relationship, as a child, with her own mother. The investigators proposed that the vehicle linking maternal representations with maternal behaviour, cognition and affective experience regarding the infant was internal or object-representations of past experiences. They suggested that the fullest understanding of these complex associations could be derived from combining attachment and psychodynamic object relations perspectives.
4.5 Summary

There is compelling evidence that maternal representations of the infant, self-as-mother and the infant-mother relationship are stable constructs which may be present and measurable in the ante-natal period. Predominant among methods of measurement in this area are structured interviews examining relevant experiences, yielding transcripts which can be submitted to discourse or thematic analysis. It appears that the accuracy of predictions regarding characteristic patterns of maternal behaviour, cognition and affective functioning in the infant-mother relationship may be increased by including these maternal representations in the predictive equation. Indeed, in adult populations these representations may be stronger predictors of functioning than more objective measures of behaviour. As such, attempts to predict the course of an individual mother’s functioning in the early post-partum should include measurement of her internal representations around mothering.
CHAPTER 5 BACKGROUND TO THE CURRENT STUDY

5.1 A model of individual courses of childbirth transition

Despite the potential benefits of drawing together conceptually linked data from psychodynamic developmental-transactional, maternal post-partum mood and infant-mother relationship literatures in the study of the childbirth transition to maternity, relatively little research has directly attempted to do so. The reasons for this are various. Research conducted from within each particular tradition has tended to be couched in the conceptual terms of that tradition, making it less accessible or interpretable in other's terms. Results have also tended to be derived from large scale group comparisons, leading to reductionistic conceptualisations of effects which have limited relevance for individuals. Frequently, assumptions are made regarding the effect of particular variables upon a given woman and her infant, with little regard for the unique constellation of variables around her which will mediate these effects. For example, an absence of social support will have less deleterious effect upon a woman who wants to immerse herself in the mothering role, than a woman who resents the confinement pregnancy and motherhood impose. All of these issues point to the need for a conceptual model which can integrate work across these traditions such that the empirical base which has developed can be meaningfully applied in preventative and clinical work with individual women and their infants. One such conceptual model has been proposed by Raphael-Leff (1983; 1985; 1992; 1993).

Drawing upon clinical and non-clinical experience (long-term individual and group-orientated clinical work and participation in non-clinical discussion groups with
primiparous and multiparous women) Raphael-Leff (1983; 1985) has proposed a psychodynamic, developmental-transactional model of the childbirth transition to maternity.

She suggests that individuals’ approaches to the childbirth transition to maternity can be clustered into “several common styles of response and beliefs underpinning them” (1993, p65) termed ‘maternal orientations’. These orientations represent three broad intra-psychic realities women may carry at the time of any given motherhood transition and are each characterised by distinct constellations of anxieties, defences and behaviours. They incorporate what the self-as-mother, the infant and the infant-mother relationship represent to the woman, heavily influencing her evolving internal affective states and manner of relating. Though women may show characteristics of more than one orientation during any given transition, Raphael-Leff suggests most show a consistent preference for one or other. Raphael-Leff proposes that these orientations remain stable throughout the pregnancy and early motherhood period, and are associated with unique courses of adjustment. These courses include differential periods of vulnerability to diminished wellbeing, with differential precipitating and maintaining factors. Hence, this model enables the observer to apply to the individual what is well established in the literature about the transition to maternity. This is done by differentially weighting variables and their effects into a transactional equation unique to the individual. Further, because these orientations are stable and detectable during the latter part of pregnancy, the characteristic psychological approach a woman takes to self-as-mother-to-be and to the unborn baby during pregnancy, will be an important predictor of her approach to herself-as-mother and to the infant in the early post-partum. Raphael-Leff emphasises
these orientations are not diagnostic or evaluative, and contends that the model can operate both cross-culturally and take some account of local trends and fashions. Initially, maternal orientation was conceptualised as a two-factor model, in which orientations fell along a bipolar continuum from Regulator to Facilitator (1983; 1985). These orientations will now be described, followed by an elaboration of recent developments in the model.

5.2 Facilitators

Women with predominantly Facilitator orientations feel proud and special at discovering they are pregnant and welcome pregnancy as a long-awaited source of fulfilment - the “culmination of their feminine identities” (Raphael-Leff, 1992, p69). They view the unborn baby as a potential social being and themselves as needing to facilitate a maternal and social environment which will meet his or her needs. From the outset Facilitators give in to “heightened emotionality......, steering clear of situations and substances (they) fear may be harmful, changing (their) diets and habits” (Raphael-Leff, 1993, p66). They readily enter into a series of symbiotic identifications with their own mothers and with their unborn babies, feeling simultaneously like the mother who carried them and like the unborn babies their mothers carried. Raphael-Leff (1993) provides an example of a Facilitator’s description of early pregnancy as follows,

“I feel very turned on and tuned in all the time, and want everybody to know I’m pregnant, even though it doesn’t show yet. I feel round and abundant and wonderful.” (p66)
This approach to the childbirth transition is likely to be underpinned by anxieties about separation, independence or aging and reflects a low tolerance of the ambivalence associated with motherhood, particularly hostile and destructive feelings. The ambivalence is defended against through denial of destructive feelings, idealisation of the pregnancy and motherhood, and by fantasies of fusion with the unborn baby. A precarious state of equilibrium results, making it difficult to pursue the developmental work of pregnancy. The greatest threat to this precarious state is the increasing differentiation between mother and unborn baby as the pregnancy progresses. For this reason the quickening may be unwelcome, making middle and late pregnancy periods associated with greater use of defences and with increased risk of maternal distress. Birth may be experienced as a painful reminder of differentiation and separateness, further threatening the precarious equilibrium until an idealised, symbiotic state can be re-established with the newborn.

In a parallel way, once a symbiotic state is re-established, the early post-partum period is likely to be a time of gratification for Facilitator women. They make great emotional investments and enjoy physical intimacy with the newborn, believe themselves especially equipped to intuit his or her needs and do not accept alternative childcare arrangements. To the observer, relations between mother and infant may appear almost textbook examples of high levels of warmth, affective attunement or containment and responsiveness of the infant to mother. However, the infant’s age-appropriate development toward differentiation and individuation are likely to be difficult for these women to tolerate, again diminishing their capacities to do the developmental work of early motherhood. This may make it difficult to de-adapt and withdraw from the
symbiotic state to promote the infant's development which, in extreme cases, they may seek to delay or prevent. This may lead to the development of overinvolved or enmeshed infant-mother relationships, and to difficulties for the infant in negotiating further developmental milestones (Henry, 1996).

Both during the pregnancy and post-partum periods it is obstacles to actualising their identities as mothers which place Facilitator women at increased risk of transition-related disturbances. In this schema, corresponding post-partum developments which will place Facilitator women at increased risk will be those in which the intimacy of the infant-mother pair is threatened. This could be expected to occur toward the middle and/or latter half of the infant’s first year, when pressures, of a financial nature for example, compel the woman to return to work; or later, when the affective, cognitive and motor development of the infant signal an increasing interest in the world outside the symbiotic infant-mother relationship. The model would predict that it is around this time that Facilitator mothers will be at increased risk of disturbances related to the transition, such as depressive maternal mood and low synchronous infant-mother interaction.

5.3 Regulators

At the other end of the continuum, women with predominantly Regulator orientations are not likely to welcome the discovery of pregnancy, which they view instrumentally as a means of getting an infant. They find the “reappraisal of their identities (foisted upon them by pregnancy) quite disconcerting” (Raphael-Leff, 1992, p67) and may feel as though they “have been taken over by an invader” (Raphael-Leff, 1992, p70). Reciprocator women view the unborn baby as presocial and themselves as
needing to regulate the young infant so that he or she adapts to the maternal and broader social environment. They resist regressive pulls toward emotionality and introspection, rather, wishing to maintain their rationality and be treated as normal. Motherhood constitutes a potential challenge to the identity of these women as self-sufficient, competent and rational beings. From early on Regulator women have trouble identifying with either their own mothers or their unborn babies, and do not readily enter into symbiotic states. Raphael-Leff (1993) offers the following example of a Regulator’s view of pregnancy,

“I’ve not allowed myself to change. I’ve see a lot of women lose their identities and become boring. I haven’t changed my routine nor my clothes much, and didn’t tell anyone I was pregnant. I think many women just use pregnancy as an excuse to be lazy and self-indulgent, and to gain extra attention: “Look at me! Look at me!” (p67)

This approach to the childbirth transition may be underpinned by anxieties about attachment, intimacy and dependence. Here, there is also a low tolerance of ambivalence, but also of loving feelings. Defensive measures of denial of loving feelings and of dependency needs, avoidance of emotional contact and compulsive controlling behaviour may be used to reduce intra-psychic conflict and maintain equilibrium. A precarious state of equilibrium results, potentially obstructing the developmental work of pregnancy. The greatest threat to this state is the blurring of mind and body boundaries, and loss of control, associated with the presence of the unborn baby inside the woman during early
pregnancy. The quickening is welcomed as a reinstatement of separateness, and though some anxiety about the uncontrolled ‘other’ inside will co-exist, the later stages of pregnancy will be associated with less use of defences and with less risk of maternal distress. Though birth is likely to be experienced as a longed-for return of separateness, bodily integrity and independence, this will be threatened by the primitive neediness and ‘absolute dependence’ (Winnicott, 1949) of the newborn, and by his or her demands for an intimate, devoted carer.

Hence, as in the pregnancy, the early post-partum period is likely to be destabilising for Regulator women, placing them at increased risk of transition-related disturbances until they can regulate the newborn and regain some control. Regulator women seek to retain emotional distance from the infant, may not be comfortable with physical intimacy, do not believe themselves to be ‘special’ to the baby and accept alternative carers. To the observer, “bursts of pleasurable engagement” may be characterised by their “brevity and brilliance.......(and often) in celebration of the infant’s maturing social personality, independence and speed of detachment from distress” (Henry, 1996, p8). As in pregnancy, disruptions to the developmental work of early motherhood can promote rigid and distant infant-mother relationships and precocious infant development (Henry, 1996). In extreme cases, Regulator women may actively promote an accelerated pace of development to reinforce separateness and independence, to maintain intra-psychic equilibrium.

Both in pregnancy and the post-partum, it is obstacles to actualising their identity as people which potentiate transition-related disturbances for Regulator women. In this schema, the corresponding post-partum period of increased risk is in the months after the
infant's birth when, despite any financial and career pressures, the woman is likely to be the primary caregiver; and when the infant's affective, cognitive and motor functions are primitive and the attachment system orients the baby to seek proximity with the attachment figure. The model would predict that it is around this time that Regulator mothers will be at increased risk of disturbances related to the transition, such as depressive maternal mood and low synchronous infant-mother interaction.

Subsequent clinical and non-clinical experience of the author and early empirical work with the model by Scher and Blumberg (1992), suggested that the two-factor model might not fully represent the variability in maternal orientation. These additional data led Raphael-Leff (1993) to elaborate her thinking about maternal orientation and reconceptualise the model as a tripartite, circular scheme. This revised model, which continues to be in the preliminary stages of development, includes the Reciprocator orientation. In a brief exposition in her most recent text 'Pregnancy: the inside story', Raphael-Leff (1993) describes the elaboration of her work as follows,

“Originally, composed of a continuum between two points - Regulators and Facilitators - I have come to recognise that the model is not linear but circular, with the intermediary group having a philosophy and identity of their own, as Reciprocators.” (p66)

Though less has been written about the Reciprocator orientation, a brief description follows.
5.4 Reciprocators

Women with predominantly Reciprocator orientations are likely to be “overjoyed to be pregnant yet regretful too of inevitable changes which are bound to occur in their professional and personal lives” (Raphael-Leff, 1993, p67). From early on they work to achieve a balance between the regressive pull toward introspection and maintenance of contact with the external world. Reciprocators identify with both their mothers and their unborn babies and readily enter symbiotic states. The following example characterises a Reciprocator’s view of pregnancy,

“It’s hard to go on with work and the rest of my life acting as if there’s no change. I need recuperation time from tiredness and discomfort, but I also need time to consolidate my career before the birth. Although I love being with my family, I want to be on my own, to relish this pregnancy, which I know will be my last.” (Raphael-Leff, 1993, p68)

The hallmarks of this orientation are “a capacity to remain aware of ambivalence and internal contradictions” (Raphael-Leff, 1993, p68) and a capacity to take a “flexible (psychological) approach” (p75). Here, the greater awareness of intra-psychic conflicts and capacity to tolerate disequilibrium make the Reciprocator less likely to mobilise primitive, rigid defences such as idealisation or denigration of the infant or of self. These women exercise flexibility in their approach to motherhood, placing the needs of the unborn infant or of self first, according to the situation. The developmental work of pregnancy progresses including forming an attachment to the unborn infant, developing
an enhanced sense of feminine identity and an enriched relationship with their partners. Women with Reciprocator orientations are “curious about” (Raphael-Leff, 1993, p72) the unborn infant and are likely to fantasise about him or her while remaining receptive to the baby’s evolving temperament and personality. The increasing separateness implied by the quickening will be more tolerable and will prompt anticipation of the birth and eagerness to ‘meet’ the infant.

As with the pregnancy, the awareness of intra-psychic conflicts and tolerance of disequilibrium characterises the birth and post-partum. Childbirth is likely to be experienced as the simultaneous loss of a pregnancy and gain of a unique child. Reciprocator women regard the infant as a social being and have the goal of achieving “interaction rather than gratification or socialisation” (Raphael-Leff, 1999) with their baby. They enter into a state of ‘primary maternal preoccupation’ (Winnicott, 1949) with the newborn facilitating his or her physical, emotional and social needs, from which they gradually emerge in response to their own narcissistic needs and the stage-appropriate development of the infant. This promotes the development of reciprocal and interdependent infant-mother relationships. In this schema there are no particular periods during which Reciprocator women are likely to be at increased risk of transition-related disturbances.

Raphael-Leff (personal communication, 1999) has also recently commented on a “conflicted group”, which may emerge from measures of maternal orientation. These women are characterised by holding two sets of internal models of parenting, both of which are experienced as “right” or one of which is preferred but the other is believed to be the “proper” way (Raphael-Leff, personal communication, 1999). Raphael-Leff
suggests this group may be identified by showing oscillation between Facilitator- and Regulator-type responses. Hence, this group may be differentiated from the others and particularly from the Reciprocator orientation which is also characterised by changeability in approach, by corresponding representational and meta-representational features. Prominent among these would be shifts between overidentification with the baby (Facilitator) and underidentification with the baby (Regulator).

In recent times Raphael-Leff has begun to draw analogies between maternal orientation and attachment (Henry, personal communication, 1998). She has proposed that these constructs, both of which incorporate representations of experiences including of the self-as-mother, infant, infant-mother relationship, anxieties and defenses around these, are likely to be associated in particular ways. In community populations Raphael-Leff has proposed the distribution of maternal orientation is similar to that of adult attachment. The largest group, the Reciprocators, would be likely to have Autonomous representations of attachment. Facilitators would be likely to have Preoccupied representations of attachment and Regulators would be likely to have Dismissing representations of attachment.

5.5 Methodological issues in the study of maternal orientation

Despite the heuristic value of this model its empirical status has been difficult to establish for a number of conceptual and methodological reasons. Firstly, the model was derived from experiences with predominantly white, middle-class women from clinical populations and there has been relatively less community or cross-cultural research.
Hence, the relevance and generalisability of the model to other populations is not yet understood.

Secondly, though the model is derived from psychodynamic, transactional-developmental theory this is not well reflected in the measurement approaches favoured to date, namely self-report instruments measuring cognitive (representational), affective and behavioural expressions of orientation through closed-ended questions.

Thirdly, though the construct of maternal orientation incorporates representational, affective, behavioural and meta-representational dimensions the instruments most widely used in research of the model, The Facilitator Regulator Questionnaire (FRQ; Raphael-Leff, 1985a) and the Pregnancy Six to Nine Months Questionnaire (P6-9MQ; Raphael-Leff, 1983, Sharp, 1995) are heavily weighted to measure the first three. These types of instruments do not provide the level of detail or scope to explore motivations behind particular responses, which is necessary to infer the meta-representational experiences which both theory and preliminary research indicates may be valuable discriminants of functioning.

Fourthly, the instruments differ in classification systems and interpretations of these, making cross study comparison difficult. The FRQ was originally developed to measure maternal orientation as a two factor construct, discriminating the Facilitator and Regulator orientations on the basis of three items, along five point Likert scales (range 0-4) in which low scores represent Facilitator-type responses and high scores represent Regulator-type responses. Scores are summed and used as a basis for classification, with low scores again taken to represent the Facilitator orientation and high scores to represent...
the Regulator orientation. The classification system and accompanying total scores appear below.

<table>
<thead>
<tr>
<th>Initial Classification</th>
<th>Total score</th>
<th>Collapsed Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Facilitator</td>
<td>0-2</td>
<td>(Collapsed) Facilitator</td>
</tr>
<tr>
<td>Moderate Facilitator</td>
<td>3-5</td>
<td>Intermediate</td>
</tr>
<tr>
<td>Intermediate</td>
<td>6-10</td>
<td>Bipolar</td>
</tr>
<tr>
<td>Moderate Regulator</td>
<td>11-13</td>
<td>(Collapsed) Regulator</td>
</tr>
<tr>
<td>Extreme Regulator</td>
<td>14-16</td>
<td></td>
</tr>
</tbody>
</table>

The Intermediate classification can be further differentiated into women whose mid-range total score reflects a tendency to respond in a consistently moderate way (Intermediate) and women whose mid-range total score represents a combination of high and low scores. Respondents who follow this latter approach are classified 'Bi-Polar'.

The P6-9MQ was also originally designed to measure antenatal orientation as a two-factor construct. It adopts a similar approach to discriminating Facilitator and Regulator orientations, along a seven point Likert scale (range 0-6) in which low scores represent Regulator-type responses and high scores represent Facilitator-type responses.
Though scores are not totalled in this system, classifications are derived from analysis of patterns of responding to critical items such that, a tendency to score low on each of these indicates a Regulator pattern and a tendency to score high on these indicates a Facilitator pattern. This system yields the classification system below.

<table>
<thead>
<tr>
<th>Initial Classification</th>
<th>Tendency to score</th>
<th>Collapsed Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitator</td>
<td>High</td>
<td>(Collapsed) Facilitator</td>
</tr>
<tr>
<td>Mixed</td>
<td>All other patterns</td>
<td>(Collapsed) Regulator</td>
</tr>
<tr>
<td>Regulator</td>
<td>Low</td>
<td></td>
</tr>
</tbody>
</table>

In the Sharp (1995) study the Mixed group were re-classified with most likely orientation group, using a logistic regression model described in detail in Section 5.5.

As a result of differences in classification method the Facilitator and Regulator classifications derived from the two instruments may not represent the same populations and may not be directly comparable. Raphael-Leff (personal communication, 1999) suggests that the Intermediate classification derived from the FRQ represents the Reciprocator orientation, characterised by responses which indicate a consistent, balanced approach to mothering. She also suggests that the Bipolar classification may represent the 'conflicted' group, who, like Facilitators and Regulators, are struggling with significant
conflicts around mothering, but who also lack a consistent strategy for dealing with these, as evidenced by extreme oscillation of response-type.

Sharp (personal communication, 1997) offers a different interpretation for these patterns of responding. Discussing the P6-9MQ, she hypothesises that women who oscillate between response-type, termed ‘Mixed’ Facilitator/Regulators in her schema, may represent the Reciprocator orientation, because their response pattern evidences the delicate balancing of needs of infant and self, and the flexibility of approach characteristic of this orientation. Because there is currently no way of ascertaining what the individual woman means when she responds in these ways, through meta-representational data for example, it is impossible to test these alternative hypotheses. These conceptual and methodological obstacles have begun to feature in the limited amount of research which has been conducted into the model.

5.6 Empirical study of the model

To date four published studies have attempted to examine the validity of the maternal orientation model and predictions derived from the model about differential courses of transition. In a pilot study Raphael-Leff (1983) set out to examine the efficacy of the two-factor maternal orientation model in a convenience sample of 38 predominantly white, middle-class women (14 pregnant women attending ante-natal classes, 24 mothers attending mother/toddler groups, and 23 non-pregnant mothers attending parent-child play groups in community settings). She developed an open-ended questionnaire incorporating items which related to the dimensions of pregnancy, labour and early motherhood along which she believed the orientations would vary. A follow-up
interview was conducted when further information was needed. On the basis of previous experience and observation Raphael-Leff chose a number of ‘a priori’ criteria for classifying participants into Regulator or Facilitator orientations. These were a) attitudes towards the establishment of a routine, b) feeding practices and c) personhood of the infant. For example, according to the theory, women with Regulator orientations would be more likely than women with Facilitator orientations to establish a routine for the day to day management of their infants, to feed by schedule and not to regard the infant as a person. Using this method 29% of the sample could be clearly allocated to the Regulator group and 49% were allocated to the Facilitator group. Approximately equal numbers of primiparous and multiparous participants fell into the two groups, suggesting that parity was not a determinant of orientation type. No information was given regarding the classification of the remainder of the sample.

On the basis of this pilot study Raphael-Leff (1985) used a retrospective design with a convenience sample of 27 predominantly white, middle-class women with children whose average age was two years to further test the validity of the two-factor model. She also set out to examine predictions derived from it regarding self-esteem and maternal post-partum mood. The earlier questionnaire was refined into a semi-structured instrument, the FRQ, which classified women into maternal orientation on the basis of responses to three items which were previously found to discriminate orientation, routine, feeding and personhood of the infant. The scoring and classification system of this instrument were described in the previous section. Women were also given a self report questionnaire regarding previous and current childcare practices for the youngest child, a self-esteem index (four items) and depression syndrome index (27 items) to measure their
experiences of self-esteem and mood in the previous two years. The two groups were compared along the dimensions of self-esteem and depressive symptoms at six weeks, between six weeks and one year, and after one year post-partum. Though statistical analyses were made using crosstabulations, trends in the data rather than statistical results were examined in detail because of the small sample size.

Eleven women were classified into the Facilitator group and 16 into the Regulator group on the basis of preferences regarding routine, feeding and personhood of the infant. Reports of pregnancy, birth and early motherhood from each group were distinctly different and generally consistent with the model, offering some support for the validity of the maternal orientation construct. Further, the different correlates of self-esteem and timing of depressive syndromes found between the groups, were also consistent with the model.

During the early stages of maternity Regulator mothers appeared to struggle more than Facilitator mothers as evidenced by longer length-of-stay in hospital after the infant's birth, by a greater tendency to establish a routine on returning home, to feel less confident, to find less enjoyment in mothering and by more tearfulness. In contrast, Facilitator mothers appeared to negotiate early motherhood more easily than Regulator mothers as evidenced in short length-of-stay in hospital, greater tendency to feel confident, and to be less tearful on discharge and by less use of alternative child-care arrangements.

Self-esteem appeared to be a critical factor in mediating vulnerability to distress as reflected in post-partum depressive symptoms, and was maintained by different variables in each orientation group. The self-esteem of Regulator mothers appeared to be
generated through independence, self-directedness and control, all of which were
curtailed by early motherhood. In contrast the self-esteem of Facilitator mothers appeared
to be generated through intimacy, spontaneity and generativity, all of which were
enhanced by early motherhood.

Finally, patterns of distress as evidenced by depressive symptomatology differed
between the groups during the course of early motherhood, most markedly at six weeks
and after one year post-partum. Specifically, the Regulator mothers showed evidence of
greater difficulty managing the demands of early motherhood and a young infant than
Facilitator mothers. At six weeks post-partum the Regulator mothers reported themselves
to be markedly more tearful and depressed, less like their normal selves, more anxious
about and less excited by their infants, and as finding less enjoyment in mothering than
Facilitator mothers. Though the difference between the groups along these variables
reduced somewhat by six months post-partum, by over one year the Regulator mothers
again reported themselves to be markedly more anxious, inadequate, unable to cope,
depressed, self-critical and self-reproachful and as less like their usual selves, and as less
critical to their infants' care than the Facilitator mothers.

As predicted from the theory the Regulator mothers were more vulnerable to
mood disturbance and less positive views of their infants during early motherhood than
Facilitator mothers - and this vulnerability coincided with an apparent erosion of their
self-esteem in contrast to the apparent enhancement of self-esteem among Facilitators. In
terms of the model this higher vulnerability of Regulator mothers at six weeks and after
one year may be accounted for by the fact that the 'untamed' newborn infant and the
'mobile, exploring and potentially mischievous toddler' pose particular challenges to the
Regulator's need for distance, control, independence and self-directedness. Though these results were consistent with both the theory and preliminary empirical results from the pilot study, their empirical standing was diminished by methodological problems. These included the small sample size and lack of representativeness, the retrospective study design, use of unstandardised instruments, absence of reliability and validity data regarding the maternal orientation construct and difficulty interpreting statistical analyses because of the small number of participants.

Scher and Blumberg (1992) went some way to addressing these methodological issues by employing a longitudinal design with a relatively large community sample of 97 Israeli mothers of European-American and Asian-African ethnic origin, with six month old infants. They aimed to study the reliability of the three item FRQ (Raphael-Leff, 1985a) and to describe the demographics associated with each maternal orientation. Unfortunately the only results published from the study concerned reliability and distribution. The investigators developed a Hebrew version of the FRQ during a pilot study, with a test-retest co-efficient over two weeks of .95. This FRQ was mailed to participants and returned in the same way.

Results showed that the questionnaire had low internal consistency, with women's responses to the items not correlated. Of these, the item regarding infant personhood and sociability was the least correlated with classification of maternal orientation, hence it was excluded as a classification criterion. Women who scored 0 and/or 1 on both the other two items were classified Facilitators, those who scored 3 and/or 4 on both items were classified Regulators, those who scored 2 on both items were classified Intermediate. The Intermediate group were further differentiated into Intermediate
(women who consistently expressed a moderate approach by endorsing 2 on both items) and Bipolar (women who expressed an oscillating and more extreme approach by endorsing 0-1 on one item and 3-4 on the other). This classification system yielded a distribution of 34% Facilitators, 34% Regulators, 15% Intermediates and 17% Bipolars. The demographic characteristics of maternal age, education, ethnicity, employment status and child’s gender were not associated with maternal orientation classification. Birth order was significantly associated with orientation such that mothers of first borns were more likely to be Regulators.

Though it was difficult to compare these results with those of Raphael-Leff (1985a) because of differences in classification system and the effect of cultural variables, a number of issues were noted by the investigators. Their results provided some evidence that further discrimination of maternal orientation was valid, might lead to different distributions of the construct and might pre-empt re-conceptualisation of the model. The investigators concluded that further development of the questionnaire was required to enhance reliability, to assess beliefs rather than expectations and to better incorporate measurement of the Bipolar classification. On the basis of further clinical and non-clinical experience and the findings which were emerging from this empirical study, Raphael-Leff (1992; 1993) began to reconceptualise the model as a tripartite, circular scheme. A delineation of this revised model including the Reciprocator orientation, was subsequently offered in her 1993 publication ‘Pregnancy: The inside story’.

Around the same time Sharp (1995) set out to building upon the work of Raphael-Leff (1985a) and Scher and Blumberg (1992), further investigating the validity of the two-factor maternal orientation model by employing a rigorous and empirically-based
methodology. In particular, Sharp aimed to investigate further the demographic profiles of each orientation and combinations of vulnerability-stress variables predictive of differential courses of transition for the orientations. Post-natal depression was the outcome variable examined in Sharp’s study.

Sharp employed a prospective, repeated measures design with a large socio-demographically representative sample (for the U.K.) of 205 primiparous women recruited through another study (Sharp, Brugha & Cooper, 1992) from a major U.K. hospital. Because of the psychometric drawbacks of the FRQ (Raphael-Leff, 1985a), Sharp revised and extended the pregnancy interview Raphael-Leff (1983) had originally used to identify the content domains of the maternal orientation construct. Sharp piloted an ante-natal version of the revised instrument on 22 women to increase the face validity, then developed a post-natal version. The ante-natal version of this instrument, called the Pregnancy Six to Nine Months Questionnaire (P6-9MQ) contains a total of 37 items sampling expectations and preferences regarding labour (nine items), the birth (11 items), the future baby (nine items), feeding practices (three items) and self as mother (five items). Twenty-four of these measure content domains specific to maternal orientation and 13 measure other dimensions of mothering. In line with conceptualisation of the construct as falling along a bipolar continuum, responses are made along a seven point Likert scale in which there is a typical Regulator anchor (0,1,2) at one end, a typical Facilitator anchor (4,5,6) at the other. A mid-point of three was included to discourage respondents from developing a response set. The post-natal version, called the Childbirth and Early Motherhood Questionnaire (CEMQ), samples the same 37 items and an
additional item regarding feeding practices, but asks the respondent to indicate actual experiences of these and the level of satisfaction associated.

Data were collected between the third trimester and nine months post-partum. During the third trimester medical records, interview and self-report instruments were used to obtain information regarding predictor variables (vulnerability and stress) including obstetric information, socio-demography, pregnancy context, recent life events, psychiatric history, perceived quality of intimate bonds, ante-natal psychiatric symptomatology, cognitive style and maternal orientation. At six and 12 weeks post-partum data regarding PND were collected using GHQ-30 (Goldberg, 1978) modified to the GHQ-28, EPNDS (Cox et al, 1987) and another instrument measuring present state, to a random subset of high and low-scorers. After nine months post-partum an extended version of the FRQ (Raphael-Leff, 1985) called the Mothering Style Interview (MSI; Sharp, 1995) was administered to a subset (42) of the sample via telephone to measure subsequent mothering practices, feelings about motherhood and attitudes toward the infant.

In the first stage of classification Sharp ascribed participants into orientations on the basis of responses to items 4a and 4b regarding feeding schedule at newborn and three months on the P6-9MQ only, because this item had been found to be strongly associated with orientation by both Raphael-Leff (1985) and Scher and Blumberg (1992). Women who responded at the Regulator end (score of 0,1,2) of the Likert scale on both items were classified as ‘Pure’ Regulators and those who responded at the Facilitator end (4,5,6) on both were classified as ‘Pure’ Facilitators. This stage of classification led to 34 participants being classified into each ‘Pure’ maternal orientation group. The remainder
of the sample could not be classified using this system because they had responded in one of a number of 'mixed' ways. For example, some participants scored at the midpoint of the scale on both items, which broadly corresponded to Scher and Blumberg's (1992) Intermediate classification. Some responded at the Regulator or Facilitator end of the scale on one item and at the midpoint on the other. Some responded at the Regulator end of the scale on one item and Facilitator end on the other, broadly corresponding to Scher and Blumberg's (1992) Bipolar classification. Because Sharp was investigating the two-factor model she proposed that this 'Mixed' group did have preferences for one or other orientation, but their preference had been obscured by unknown confounding factors. For example, the preference of a Facilitator to feed on demand may have been subjugated by financial pressures and the need to return to work soon after birth. This may have lead the Facilitator to respond at the Facilitator end of the scale on the item regarding feeding schedule for the newborn, but at the Regulator end on the item regarding feeding schedule at three months.

A second stage of classification was employed to enable participants in the 'Mixed' group to be re-classified into either Regulator or Facilitator classification. In this stage Sharp built a logistic regression model on the basis of data obtained from the 68 'Pure' Regulators and 'Pure' Facilitators. This involved treating the expected maternal orientation classification (Facilitator or Regulator) as the criterion variable in a statistical equation, and treating responses to the 24 Facilitator/Regulator items as possible predictors. This analysis yielded a logistic regression model comprising nine of the 24 critical items, which correctly classified the 34 'Pure' Regulators and 34 'Pure' Facilitators into their expected maternal orientations 76% of the time. The relevant items
were regarding labour (1a ‘exhausting vs exciting’; 1b ‘controlled by staff vs self’; 1c ‘lying-down vs walking around’; 1e ‘staff present vs family & friends present’); the baby (3a ‘take over vs fit in’; 3c ‘be a stranger vs be familiar’; 3g ‘be born not communicating vs born communicating’); parenting (3i ‘mother knows best vs baby knows best’) and early motherhood (5b ‘establish baby in a routine vs adapt to the baby’).

The model was then applied to participants in the ‘Mixed’ group in order to ascribe them to their most likely maternal orientation classification. This led 53 participants in the ‘Mixed’ classification to be re-classified as Regulators and 77 re-classified as Facilitators. The ‘Pure’ and ‘Mixed’ groups were then collapsed, leaving 87 (Collapsed) Regulators and 111 (Collapsed) Facilitators. The preferred feeding practices of the (collapsed) Regulator and collapsed Facilitator orientations were then compared using Mann-Whitney U-tests as a further validity check of classification. The new orientation groups differed significantly in the feeding style they preferred to adopt for the newborn with Regulators preferring schedule feeding and Facilitators preferring demand feeding as expected. The groups did not differ in preferred feeding style at three months, however. Ante-natal expectations and preferences derived from the P6-9MQ, were stronger predictors of maternal orientation classification than actual experiences of mothering (CEMQ). Sharp hypothesised that ante-natal data were a more reliable basis for predicting maternal orientation, because they were relatively uncontaminated by the influence of factors which might lead a woman’s actual mothering practices to deviate from her preferences.

Because most of the data generated were categorical and the distributions of responses to items were non-normal, non-parametric univariate analyses of between-
group differences were made, predominantly using Mann-Whitney U-Tests. In cases where data generated were categorical, crosstabulation tables were used.

Firstly, the validity of the model was tested by examining patterns of responding to the 24 Facilitator/Regulator items on each of the instruments. Results generally supported the hypothesis that women could be reliably classified into distinctly different maternal orientations on the basis of ante-natal expectations and preferences regarding pregnancy, labour and birth, the newborn and early motherhood. The two groups differed significantly on 13 of the 24 Facilitator/Regulator items (expect the labour to be la ‘exhausting vs exciting’; 1b ‘controlled by staff vs by self; 1c ‘lying down vs walking around’; 1d ‘monitored vs not monitored; 1e ‘staff present vs family & friends present’; expect the birth to be 2b ‘dreading it vs looking forward to it’; expect the baby to 3a ‘take over vs fit in’; 3b ‘stranger vs familiar’, 3c ‘demanding vs needy & helpless’; 3d ‘unable to tell me apart vs able to tell me’; 3f ‘mother knows best vs baby knows best’; expectations of self-as-mother 5b ‘establish baby in a routine vs adapt to the baby’; 5d ‘unchanged vs changed’). In all but one case this difference was in the direction predicted by the theory. Of the remaining 11 items, trends were in the direction of the theory in all but one case. Further, the groups differed significantly in regard to estimates of the degree of change an infant would make to their lives, with Regulators showing significantly lower estimates of change than Facilitators. Though the groups were significantly different in reports of change in only one of five lifestyle domains sampled during pregnancy (Regulators reported significantly less change in eating habits than Facilitators), trends of difference on all other items (social activities, sex life, work habits or close personal relationships) were in the directions predicted by the theory. This
supported the work of Raphael-Leff (1985a) regarding distinctive and differentiable characteristics of each orientation.

Next the socio-demographics of the groups were analysed. In contrast to the findings of Scher and Blumberg (1992) the orientation groups differed along the demographic variables of socio-economic group, educational background and ethnic origin, though along no others. Regulators were from significantly lower socio-economic groups, had significantly lower educational attainments and were significantly more often of Asian or Indian ethnic origin than Facilitators. This unexpected significant result was attributed to the overrepresentation of Asian and Indian participants in the Regulator group, possibly reflecting culture-bound trends regarding mothering.

Secondly, vulnerability and stress variables of the groups were analysed. The groups did not differ along stressor variables such as pregnancy context, personality characteristics (neuroticism), mothers’ intimate relations with their own mothers and partners, their own past psychiatric history, obstetric outcomes and health of the baby. The only variable along which they did vary was a subscale of attributional style. Regulators tended to attribute the causes of hypothetical bad events internally more often than Facilitators. Sharp suggested this might be consistent with Regulator’s preference for control over events related to motherhood as proposed by Raphael-Leff (1983; 1985).

Thirdly, mothering practices throughout the nine months were compared. The Regulator and Facilitator groups did not differ in the mothering practices they adopted or in their feelings about motherhood and about the nature of their relationship with their baby. Sharp attributed this non-significant result to the small subset of the sample used in
this stage of the study, the retrospective nature of the data, and the high socio-
demographic and educational levels of the sample as a whole. She believed that the high
educational levels of participants made them likely to return to paid employment
regardless of their maternal orientation, thereby distorting results.

Finally, expectation-outcome disparity was examined as a predictor of wellbeing
across the groups. As Raphael-Leff (1985) had found, greater disparity between women's
ante-natal expectations of events and their subsequent experiences was significantly
predictive of multiple indices of reduced wellbeing, particularly postpartum depressive
symptoms and depression diagnosis. Sharp noted that the strength of these predictions
was greater than that of other predictor variables frequently cited in the post-partum
depression literature. Further, as predicted, different elements of expectation-outcome
disparity were important for the two orientation groups, as were the type of external
stressors and internal vulnerability factors predictive of poor outcome.

Overall, Sharp interpreted her results as supporting those of Raphael-Leff (1983;
1985) regarding the efficacy of the two-factor maternal orientation model, and of
predictions derived from it regarding differential courses of transition and factors
associated with subsequent satisfaction with motherhood and PND. Though this study
was conducted with rigour and the results were compellingly consistent with the two-
factor model, there were prominent anomalies.

Importantly, no additional data regarding the test-retest reliability or concurrent
validity of the instrument of measurement, were obtained from this study. New constructs
are founded on psychometric data such as these and though Sharp successfully
established some aspects of validity, data were derived only from study of the internal
consistency of the instrument. The absence of more complete reliability and criterion-related data, for example, somewhat detract from the predictive validity data obtained.

Additionally, the large size of the 'Mixed' orientation group and the fact that it contained women who responded in markedly different ways, suggests that the complex statistical procedures used to re-classify these women into either (Collapsed) Facilitator or (Collapsed) Regulator groups may have obscured important and meaningful variations in maternal orientation. The fact that the logistic regression model used for this purpose accounted for only three quarters of the variance in classifications was consistent with this hypothesis.

Since the major study of Sharp (1995) there have been one smaller-scale and as yet unpublished study conducted by an Australian researcher (Durrell, 1998) in partial fulfilment of academic degrees in Psychology (Honours). Because this work has not been published, a few details will be given only. Durrell set out to build upon the work of Scher and Blumberg (1992) by further examining the distribution of maternal orientation, and the work of Raphael-Leff (1985) and Sharp (1995), by examining the relationships between maternal orientation and self-esteem, and maternal orientation and adult attachment. Durrell intended to measure maternal orientation assuming a tripartite model.

Durrell recruited a community-based sample of 67 primiparous women whose infants were between two weeks and 12 months of age. Maternal orientation was measured using the FRQ (Raphael-Leff, 1985) and the other variables were measured concurrently using established self-report instruments. Durrell hypothesised that there would be differences in self-esteem levels of Facilitators and Regulators, mediated by employment status. She also hypothesised that both Facilitators and Regulators would be
insecurely attached, but that Reciprocators would be securely attached. Finally, she hypothesised that secure mothers would have higher levels of self-esteem than insecure mothers. The distribution of maternal orientation in the sample was 45% Facilitators, 45% Intermediaries and 6% Regulators. Though the bimodal distribution was consistent with the original theory and results of studies testing the two-factor model (Raphael-Leff, 1985; Sharp, 1995), it was not consistent with the revised theory and distribution obtained by Scher and Blumberg (1992). Again, the large size of the Intermediary group suggested that further discrimination within the group may have been warranted, and may have altered the distribution. Other results of the study did not support the hypotheses.

There were no significant differences in the self-esteem of employed and unemployed Facilitators as predicted and found previously by Raphael-Leff (1985). There was also no significant association between adult attachment and maternal orientation classifications. The single significant finding was of an association between adult attachment style and self-esteem in the direction predicted, such that securely attached participants showed higher levels of self esteem than insecurely attached participants. Durrell attributed her mixed results to sampling problems such as small sample size, to the psychometric drawbacks of the FRQ, particularly low content validity, and to social desirability effects.

5.7 Summary

Preliminary evidence suggests the maternal orientation model of Raphael-Leff (1983; 1985; 1992; 1993) may be helpful in conceptualising and predicting individual courses of childbirth transition to maternity, and their concomitants. There is evidence that women can be classified into theoretically meaningful maternal orientations (Durrell,
1998; Raphael-Leff, 1985; Scher & Blumberg, 1992; Sharp, 1995). These orientations appear to be differentiable (Raphael-Leff, 1985; Sharp, 1995) and to be associated with different periods of heightened vulnerability to indices of diminished wellbeing (Raphael-Leff, 1985), which are precipitated by different combinations of vulnerability-stress variables (Sharp, 1995). In the latter study the strength of these predictions has gone beyond that of other variables established in the post-partum literature, attesting to the potential value of the model. To date most of this evidence pertains to PND as an outcome variable (Raphael-Leff, 1985; Sharp, 1995) but there has been some preliminary investigation regarding the relationship with the infant. However, a number of conceptual and methodological problems recur in this work, particularly in the measurement of the revised, tripartite model, which awaits further empirical exploration and refinement. These include the fact that the most established instruments do not closely reflect the psychodynamic basis of the model or the revisions made to it, yield little meta-representational data, do not have established test-retest reliability, concurrent and discriminant validity, and employ varying classification systems which may make cross study comparison difficult.

5.8 Study hypotheses and exploratory question

The aim of the study was to build upon the work of Raphael-Leff (1985), Scher and Blumberg (1992) and Sharp (1995) in investigating women’s unique and subjective experiences of the childbirth transition to maternity, and some concomitants.
Firstly, to generate further empirical data which might help answer questions regarding the distribution of maternal orientation, the distribution of maternal orientation classifications derived from the P6-9MQ was examined.

Secondly, to extend the existing validity data available on the instrument for which there is most empirical support, the P6-9MQ (Raphael-Leff, 1983; Sharp, 1995), the content, discriminant and concurrent validity of the instrument were examined with an underlying assumption being that the construct was multi-factorial (Raphael-Leff, 1993).

Thirdly, this study examined the predictive validity of some hypotheses tentatively derived from the revised model (Raphael-Leff, 1993). These were the propositions that the three maternal orientations were associated with differential timing of increased vulnerability to indices of diminished post-partum wellbeing (Raphael-Leff, 1985; Sharp, 1995) such as maternal psychiatric symptomatology and depressive symptomatology (Raphael-Leff, 1985; Sharp, 1995), depression diagnosis and low infant-mother synchrony. The following hypotheses were postulated:

Hypothesis 1- Women can be validly classified into expected maternal orientation groups on the basis of ante-natal expectations and preferences regarding labour, birth, the infant and self in early motherhood as measured by the P6-9MQ, in line with predictions from the revised maternal orientation model of Raphael-Leff (1993)
Hypothesis 2 - The maternal orientation groups women are classified into can be
discriminated on the basis of systematic differences in ante-natal expectations and
preferences regarding labour, birth, the infant and self in early motherhood as measured
by the P6-9MQ, in line with predictions from the revised maternal orientation model of

Hypothesis 3 - Features of women’s ante-natal expectations and preferences regarding
motherhood as measured by the P6-9MQ, will be associated with maternal post-partum
minor psychiatric symptomatology at six weeks in line with the revised maternal
orientation model (Raphael-Leff, 1993). Specifically, women with Facilitator orientations
will show lower prevalence of minor psychiatric symptomatology then women with
Regulator orientations.

Hypothesis 4 - Features of women’s ante-natal expectations and preferences regarding
motherhood as measured by the P6-9MQ, will be associated with maternal post-partum
minor depressive symptomatology at six weeks post-partum in line with predictions from
the revised maternal orientation model of Raphael-Leff (1993). Specifically, women with
Facilitator orientations will show lower prevalence of depressive symptomatology than
women with Regulator orientations.

Hypothesis 5 - Features of women’s ante-natal expectations and preferences regarding
motherhood as measured by the P6-9MQ, will be associated with maternal major
depression at eight weeks post-partum in line with predictions from the revised maternal
orientation model of Raphael-Leff (1993). Specifically, women with Facilitator orientations will show lower prevalence of major depression than women with Regulator orientations.

In addition to these five hypotheses, an exploratory question was investigated to begin operationalising preliminary hypotheses offered by Raphael-Leff (1993) regarding the impact of maternal orientation upon the early infant-mother relationship. The following exploratory question was examined,

Exploratory Question 1 - Is there evidence of a meaningful association between women’s ante-natal expectations and preferences regarding motherhood as measured by the P69MQ and infant-mother synchrony at eight weeks post-partum?
CHAPTER 6 GENERAL METHODOLOGY

6.1 Sampling

Participants were recruited from the ante-natal clinics of a large general hospital in Melbourne, Australia which serviced one of the six metropolitan health care regions in the State of Victoria. Recruitment occurred during a four month period between November 1996 and March 1997. Inclusion criteria for eligibility to participate included being a) over 36 weeks pregnant and b) English speaking. A total of 280 women were found to be eligible to participate, each of whom was sent an ante-natal package of instruments. Of these 73 (26%) women consented to participate and returned the package. This group became the total sample (TS) and will be referred to as such throughout this thesis. Table 6.1 presents frequencies of socio-demographic descriptive characteristics for the TS.

As can be seen from Table 6.1, the average age of participants was 28 years. Over 50% had been born in Australia, with around another 16% being born in Asian or Indian countries. Over 30% did not nominate a religion and over 20% reported being Roman Catholic. Over 50% had been educated to secondary school level with almost all of the remainder educated to tertiary level. At the time of recruiting almost all were living with their partners, about 75% of whom were marital partners. Over 20% nominated their primary occupation as homemaker, with the next largest occupational groups being those of student (13%), administrative (10%), sales (9%) and teaching (8%). Sixty percent had no children, with the remainder having other children, most of whom had one more child at home. For over 60% the pregnancy had been planned, and for over 60% it had involved
no complications. Just over 10% reported an onset of gestational diabetes and a similar proportion reported bleeding throughout the pregnancy.

Table 6.1  
Frequency of socio-demographic characteristics of the TS (n=73)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>(%) of TS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of birth</td>
<td>Mean</td>
<td>1968 (St.d. 5.4 years)</td>
</tr>
<tr>
<td></td>
<td>Range</td>
<td>1952 to 1981</td>
</tr>
<tr>
<td>Country of birth</td>
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<tr>
<td></td>
<td>Australia</td>
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</tr>
<tr>
<td></td>
<td>China</td>
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</tr>
<tr>
<td></td>
<td>Syria</td>
<td>(1%)</td>
</tr>
<tr>
<td></td>
<td>New Zealand</td>
<td>(1%)</td>
</tr>
<tr>
<td></td>
<td>India</td>
<td>(6%)</td>
</tr>
<tr>
<td></td>
<td>United States</td>
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</tr>
<tr>
<td></td>
<td>Egypt</td>
<td>(4%)</td>
</tr>
<tr>
<td></td>
<td>Germany</td>
<td>(4%)</td>
</tr>
<tr>
<td></td>
<td>Vietnam</td>
<td>(4%)</td>
</tr>
<tr>
<td></td>
<td>El Salvador</td>
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<tr>
<td></td>
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</tr>
<tr>
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<td>Holand</td>
<td>(1%)</td>
</tr>
<tr>
<td></td>
<td>Yugoslavia</td>
<td>(1%)</td>
</tr>
<tr>
<td></td>
<td>Greece</td>
<td>(1%)</td>
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<tr>
<td></td>
<td>Argentina</td>
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<td></td>
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<td></td>
<td>Scotland</td>
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<tr>
<td></td>
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<td></td>
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<tr>
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<td>Mauritius</td>
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<tr>
<td></td>
<td>Bosnia &amp; Herzegovina</td>
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<td>Occupation</td>
<td>Frequency</td>
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<tr>
<td>Accounting</td>
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<tr>
<td>Food/hospitality</td>
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<td></td>
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<tr>
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<td>Art/design</td>
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<td>islam</td>
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<td>Buddhist</td>
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<td>Greek Orthodox</td>
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<tr>
<td>Assembly of God</td>
<td>(1%)</td>
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<tr>
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</tr>
<tr>
<td>Jehovah Witness</td>
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<tr>
<td>Uniting Church</td>
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<table>
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<th>Frequency</th>
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<td>One child</td>
<td>(30%)</td>
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<tr>
<td>Two children</td>
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<table>
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<tr>
<td>Planned</td>
<td>(62%)</td>
</tr>
</tbody>
</table>
Table 6.1
Frequency of socio-demographic characteristics of the TS continued

<table>
<thead>
<tr>
<th>Pregnancy complications</th>
<th>No complications (65%)</th>
<th>Ruptured membrane (3%)</th>
<th>Baby in breech (4%)</th>
<th>Hypertension (3%)</th>
<th>Bleeding (8%)</th>
<th>UTI (1%)</th>
<th>Gestational diabetes (8%)</th>
<th>Low fluid levels (1%)</th>
<th>Miscarriage (1of 2) (1%)</th>
<th>Early labour (1%)</th>
<th>Unknown (4%)</th>
<th>SLE &amp; PIH (1%)</th>
</tr>
</thead>
</table>

In order to ascertain whether the TS was demographically representative of the patient population which had attended the ante-natal clinics in the period prior to the study, demographic data were obtained for the ante-natal clinic population in the preceding January 1995 to June 1996 period, to be termed the clinic population (CP). The variables about which there was information were age, country of birth and marital status. Table 6.2 presents frequencies of socio-demographics of the CP and TS.

Table 6.2
Frequency of socio-demographic characteristics of the CP and TS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>CP (n=5546)</th>
<th>TS (n=65)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of birth</td>
<td>1966</td>
<td>1968</td>
</tr>
<tr>
<td></td>
<td>St.d. 6.28</td>
<td>St.d. 5.42</td>
</tr>
<tr>
<td>Country of birth</td>
<td>Australia 2333</td>
<td>Australia 37</td>
</tr>
<tr>
<td></td>
<td>Asia 1599</td>
<td>Asia 5</td>
</tr>
<tr>
<td></td>
<td>Other 1621</td>
<td>Other 2</td>
</tr>
<tr>
<td>Marital status</td>
<td>Married 3979</td>
<td>Married 49</td>
</tr>
<tr>
<td></td>
<td>Other 1574</td>
<td>Other 19</td>
</tr>
</tbody>
</table>
Analysis of age, a continuous variable, was made using a two tailed t-test. For the other variables which were categorical, crosstabulation tables and Chi square statistics were used. In the case of country of birth, a two (levels of group) by three (levels of demographic variable) table was used. In the case of marital status a two by two table was used. Alpha levels were set at .05.

Significant differences were found between the groups in age, t (5609) = -2.05, p<.05 (2 tail), with the CP being significantly older than the TS. Country of birth was collapsed into Australian, Asian and other because this seemed a meaningful way of group the data and because Sharp (1995) had noted the significance of Asian women in the distribution of maternal orientation classifications, particularly of Regulators. The distribution of responses on country of birth was significant, Chi square (2) = .052, p<.001, with the CP showing a higher proportion of Asians than the TS. Marital status was collapsed into two categories, married and other. The distributions were not significant, Chi square (1) = .001, p>.05.

Overall the TS was deemed to be representative of the CP in marital status but to have an overrepresentation of younger women and an underrepresentation of Asian-born women.

Exclusion criteria were introduced at the six week post-natal stage of data collection to ensure that none of the participants had become ineligible to continue. These included having subsequently given birth to a) a stillborn infant; b) an infant with severe congenital abnormalities and c) an infant who died peri-natally. As none of the participants met these exclusion criteria all were sent a post-natal package of instruments.
Twenty two (30%) of these did not return the package and will be referred to throughout this thesis as the non-completer group (NCG).

In order to ascertain whether the NCG (n=22) differed from the remainder of the TS, to be called the completer group (CG n=51), the two groups were compared along all 10 demographic variables used in this study. Table 6.3 presents frequencies of socio-demographic characteristics of the NCG and CG.

Table 6.3
Frequency of socio-demographic characteristics of the NCG and CG

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>NCG</th>
<th></th>
<th>CG</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n=22) X</td>
<td>27.09</td>
<td>(n=51) X</td>
<td>29.69</td>
</tr>
<tr>
<td>Age</td>
<td>St.d. 5.16</td>
<td></td>
<td>St.d. 5.39</td>
<td></td>
</tr>
<tr>
<td>Country of birth</td>
<td>Australia 8</td>
<td></td>
<td>Australia 33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other 14</td>
<td></td>
<td>Other 18</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>Married 17</td>
<td></td>
<td>Married 39</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other 5</td>
<td></td>
<td>Other 12</td>
<td></td>
</tr>
<tr>
<td>Living安排.</td>
<td>With partner 21</td>
<td></td>
<td>With partner 48</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other 1</td>
<td></td>
<td>Other 3</td>
<td></td>
</tr>
<tr>
<td>Level of ed.</td>
<td>Secondary 14</td>
<td></td>
<td>Secondary 26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tertiary 8</td>
<td></td>
<td>Tertiary 25</td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td>Tertiary trained 4</td>
<td></td>
<td>Tertiary trained 12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other 18</td>
<td></td>
<td>Other 3</td>
<td></td>
</tr>
</tbody>
</table>
Table 6.3  
Frequency of socio-demographic characteristics of the NCG and CG continued

<table>
<thead>
<tr>
<th></th>
<th>(n=22) Christian</th>
<th>(n=51) Christian</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion</td>
<td>Christian</td>
<td>3</td>
<td>Christian</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>19</td>
<td>Other</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-exist. children (n=22) No children</td>
<td>17</td>
<td>(n=51) No children</td>
<td>27</td>
<td>Children</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Children</td>
<td>5</td>
</tr>
<tr>
<td>Plan. of pregnancy (n=22) Planned</td>
<td>12</td>
<td>(n=50) Planned</td>
<td>32</td>
<td>Unplanned</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Unplanned</td>
<td>10</td>
</tr>
<tr>
<td>Pregnancy compl. (n=22) No complications</td>
<td>17</td>
<td>(n=51) No complications</td>
<td>31</td>
<td>Complications</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Complications</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Age was analysed using a two tailed t-test and for categorical variables, two (level of group) by two (level of socio-demographic variable) or two by three crosstabulation tables and Chi square statistics were used. When a cell count in any of the two by two crosstabulation tables fell below five, Fishers Exact was used to correct for violations of Chi square assumptions, or in the case of the single two by three table, Phi statistics were used for this purpose. As 10 independent analyses were made the likelihood of obtaining a significant result on one of the analyses by chance was increased. To correct for this statistical possibility the alpha level was increased from the usual $p<.05$ to $p<.01$ for all analyses.

There were no significant differences between the groups on age, $t(71)=1.912$, $p>.01$ (2 tail). Distributions of socio-demographic variables was generally not significant including marital status, Chi square $(1)=.006$, $p>.01$; level of education, Chi square
living arrangements, Fishers Exact (1)=.053, p>.01; occupation, Fishers Exact (1)=.3, p>.01; religion, Fishers Exact (1)=.92, p>.01; number of pre-existing children, Chi square (1)=3.8, p>.01; planning of pregnancy, Chi square (1)=.575, p>.01 and pregnancy complications, Chi square (1)=1.856, p>.01. The distribution of country of birth was significant, Chi square (1)=5.02, p<.01, with the NCG having more non-Australian-born participants than the CG. In view of the identified underrepresentation of Asian-born women in the TS and of the significance of Asian-born women in the distribution of maternal orientation classifications (Sharp, 1995), further analysis was made of country of birth by collapsing the variable three ways into Australian-born, Asian-born and other. In this analysis the distribution of responses was not significant, Phi (2)=.262, p>.01.

Overall, the NCG was deemed to be representative of the CG on all socio-demographic variables excepting having an over-representation of non-Australian, but not specifically Asian-born, women.

As two sets of six week post-natal data from the CG were not fully legible, full data sets were available for 49 women. Of these 49 women 7 (14%) scored above the clinical cutoff of the PND screening instrument described in Chapter 6, and required follow-up to determine depression caseness. As one declined this follow-up and another failed to attend two appointments, caseness was determined for the remaining five women only.

Given the exploratory nature of the eight week post-natal follow-up of mother-infant synchrony, the high level of demand it placed upon participants and the labour intensiveness of data collection, the researcher decided to select a subset of 15 infant-
mother dyads to participate at this stage. To help minimise any selection bias a randomised sampling method was used until 15 infant-mother dyads had been selected from the CG. Four of these did not attend the scheduled session because of difficulties with transportation and childcare, leaving a total of 11 dyads as participants. In order to ascertain whether this subset, to be called the infant-mother subset or IMS, differed meaningfully from the remainder of the total sample, the two were compared along the 10 socio-demographic variables. Table 6.4 presents frequencies of socio-demographic characteristics of the IMS and remainder of the TS.

Table 6.4
Frequency of socio-demographic characteristics of the IMS and TS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>IMS</th>
<th>Remainder of TS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n=11)</td>
<td>(n=54)</td>
</tr>
<tr>
<td>Age</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>31.5</td>
<td>28.7</td>
</tr>
<tr>
<td></td>
<td>St.d.</td>
<td>St.d.</td>
</tr>
<tr>
<td></td>
<td>6.8</td>
<td>5.1</td>
</tr>
<tr>
<td>Country of birth</td>
<td>Australia</td>
<td>Australia</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Asia</td>
<td>Asia</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td>Marital status</td>
<td>Married</td>
<td>Married</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>Living arrange.</td>
<td>With partner</td>
<td>With partner</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Level of ed.</td>
<td>Secondary</td>
<td>Secondary</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Tertiary</td>
<td>Tertiary</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>23</td>
</tr>
<tr>
<td>Occupation</td>
<td>Tertiary trained</td>
<td>Tertiary trained</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>4</td>
</tr>
</tbody>
</table>
As before, age was compared using a two tailed t-test and for categorical variables, two by two or two by three crosstabulation tables and a Chi square, Fishers Exact or Phi statistics, were used to correct for violations of Chi square assumptions. As before the alpha level was set at \( p < .01 \).

There were no significant differences between the groups on age, \( t(63) = 1.55, p > .01 \) (2 tail). Distributions of the other socio-demographic variables were also not significant including marital status, Fishers Exact (1) = .0956, \( p > .01 \); country of birth (Australian-born, Asian-born and other) Phi (2) = .336, \( p > .01 \); living arrangements, Fishers Exact (1) = .1156, \( p > .01 \); level of education, Fishers Exact (1) = .043, \( p > .01 \); occupation, Fishers Exact (1) = .179, \( p > .01 \); religion, Fishers Exact (1) = .0105, \( p > .01 \); planning of pregnancy, Fishers Exact (1) = .0627, \( p > .01 \); pregnancy complications, Fishers Exact (1) = .0169, \( p > .01 \) and number of pre-existing children, Chi square (1) = .106, \( p > .01 \).

Overall, the IMS was deemed demographically representative of the TS. One of the infant-mother synchrony data sets could not be scored because the faces of the woman
and her infant were too often out of camera view. This left a total of 10 infant-mother synchrony data sets.

6.2 Design and procedure

A flowchart of the stages of recruitment and data collection, along with the instruments administered at each, is presented in Appendix A. A prospective design guided data collection in this study. Initially clinic staff referred eligible women, who were then approached by the researcher after their ante-natal appointments. At this time the research was outlined, they were invited to participate and given an ante-natal package of instruments to return by mail if they wished. When it became apparent that this recruitment method was time consuming, labour intensive and unsuccessful in reaching all eligible women 2-3 weeks after recruitment had begun and with nine participants already recruited, the method was modified. Thereafter the researcher randomly selected a clinic to sample from each week, and obtained the patient records for that clinic. All eligible women due to attend the clinic were sent an ante-natal package of instruments. This package included a covering letter (Appendix B), participant information sheet (Appendix C), consent form (Appendix D), socio-demographic information sheet (Appendix E) and measure of maternal orientation (Appendix F). In the covering letter each woman was invited to return the package in a self-addressed envelope (provided) or via the ‘Returns Box’ at the ante-natal clinic.

Five to six weeks after the due date of each baby the six week post-natal follow-up of minor psychiatric, minor depressive and major depressive symptomatology began. The researcher checked participant obstetric records to clarify whether any of the
participants met the exclusion criteria for this stage. As none did, the second package of
instruments was mailed to participants. This package included a covering letter (Appendix G), screening measure of minor psychiatric symptomatology (Appendix H) and screening measure of minor depressive symptomatology (Appendix I). In the covering letter each was asked to return the completed instruments in the self addressed envelope provided, within seven days of receipt. Participants who did not return the questionnaires within this time were telephoned by the researcher and asked if they would be willing to do so.

These instruments were scored on receipt by the researcher and because she had not examined any ante-natal data provided excepting the due date of participants, she was blind to other potentially confounding data. Participants who scored above the clinical cutoff of the screening measure of minor depressive symptomatology were telephoned by the researcher to ask if she could meet with them for a brief interview to discuss some of the concerns they had mentioned on their questionnaires. The purpose of this interview was to establish caseness and discuss referral for clinical follow-up. Though one participant declined and another did not attend two appointments arranged, both agreed to be referred back to their treating midwife and private psychiatrist respectively for further follow-up of clinically significant symptomatology. Of the remainder, two participants were interviewed at the hospital for reasons of convenience and privacy, and the others were interviewed at home. Interviews lasted between 40 and 60 minutes and were conducted according to a semi-structured schedule (Appendix J) in which the researcher inquired about the pregnancy, labour, birth and postnatal period sequentially and allowed the participant to talk spontaneously and in as much detail about each subject as she
wished. During the interview the researcher discussed the issue of follow-up of clinically significant symptomatology with the women, and in each case it was agreed that the participant would be referred back to the treating midwife for this purpose. The researcher made these referrals for further follow-up within one week of discussing this with the participant. On the basis of observational and descriptive data collected during the interviews, the researcher subsequently completed the diagnostic checklist, (Appendix N) for each of those interviewed.

Seven to eight weeks after the baby’s due date, follow-up of infant-mother synchrony began. During the telephone call the researcher used to randomly recruit 15 infant-mother dyads from the CG, each was given the following explanation. Mothers were invited to participate in what were termed the ‘infant-mother play sessions’ described in the participant information sheet. The researcher explained that these sessions would take around 45 minutes and would be held in an informal setting associated with the hospital. Mother and baby would be invited to play together as though they were at home while she unobtrusively watched and videotaped this. The videotapes would be coded by the researcher to identify different ways of playing together and would not be viewed by anyone else or used for any other purpose. Interaction video taping sessions were conducted in a standardised setting and according to a standardised protocol (see Appendix K). The settings chosen were two clinical-observation rooms aligned with the hospital but located off-campus, to help normalise the experience and increase the informality for participants. Each room had a window, desk with computer, three chairs, small table and a filing cabinet - each of which was located in the periphery and did not intrude upon the space designated for infants and mothers to use. The video-
camera was positioned on the small table against the wall inside the room in which there was a two way mirror. The spatial parameters of the room which would be taken in by the camera viewfinder were marked on the floor with masking tape. A chair, baby rug, teething rattle, squeaky toy and rolling clown were placed in the far left-hand corner of the designated space. Another chair was placed outside the designated space, in the far right corner of the room and the remaining chair was pushed into the desk.

On arrival each participant and her infant were led into the clinic room and invited to be seated within the designated space. The researcher seated herself in the chair opposite, thanking the participant for attending. She explained that the session would begin with a warm up period during which the participant could ask questions, followed by a 12 minute period of infant-mother play which would be video taped, concluding with a cool down period during which the participant could ask any further questions and prepare session to end. When the warm up was complete, the researcher asked “Would you like to begin the taping now?” Once consent was given she turned on the camera with the instructions “play with your baby as if you were at home - do whatever comes naturally” then left the room to seat herself in the observation room. When the 12 minute period was over the researcher knocked on the door, entered the room and turned the camera off, then seated herself as before with the comment, “The taping is over now, so this is the cooling down time. What was it like?” The researcher then allowed the participant to talk in an undirected way about the experience and answered any further question for up to 30 minutes. Each participant was ready to leave within this time and was thanked again for her contribution, then shown out. This concluded data collection for the study.
Because the method used to recruit the TS was modified after 9 participants had been recruited, data related to the hypotheses obtained from these 9 were excluded from the study analyses. For this reason results presented in Chapter 8 are estimates of the TS results.

6.2.1 Information given to participants at the beginning of the study

Initial information regarding the aims and methodology of the research and credentials of the researcher was included in the ante-natal package of instruments as a covering letter (Appendix B), participant information sheet (Appendix C) and consent form (Appendix D). The consent form was based upon the pro-forma recommended by the Human Research and Ethics Committee of the University of Wollongong.

6.2.2 Information given to participants at six weeks post-partum

Participants were re-familiarised with the aims and methodology of the research through another covering letter (Appendix G) which was included in the post-natal package of instruments.
CHAPTER 7 INSTRUMENTS

7.1 Ante-natal instruments

7.1.1 Socio-demographic Information Sheet

An information sheet was developed by the researcher for the purposes of the study, to collect participant details and information regarding the 10 socio-demographic variables being used. This form appears as Appendix E.

7.1.2 Pregnancy Six to Nine Months Questionnaire (P6-9MQ)

The P6-9MQ (Sharp, 1995) is a 37 item self report questionnaire designed to measure women’s preferred mothering orientations based upon the two-factor maternal orientation model during the third trimester. It was developed as a revised and extended version of the pregnancy interview developed by Raphael-Leff (1983). The P6-9MQ poses 37 statements which sample expectations and preferences regarding labour (nine items), birth (eleven items), baby (nine items), feeding (three items) and early motherhood (five items) matched to 37 bipolar Likert scales. Twenty-four of these items, termed Facilitator/Regulator items, were derived from the pregnancy interview of Raphael-Leff (1983) and measure content domains specific to maternal orientation. The remainder were designed to measure more general dimensions of mothering. The Facilitator/Regulator generally have a typical Facilitator anchor to the left and a typical Regulator anchor to the right, though some are reversed to reduce the likelihood that response sets will develop. Responses are made using a forced choice paradigm in which
the respondent indicates her preference about how these events will transpire by ticking

the box most representative of her view on the Likert scale. For example,

4a) To begin with do you intend to:

Feed the baby on demand ................................................. Feed at set times

[6] [5] [4] [3] [2] [1] [0]

4b) After several months do you intend to:

Feed the baby on demand ................................................. Feed at set times

[6] [5] [4] [3] [2] [1] [0]

As the example shows responses have a range of 0-6 and can receive a maximum

score of 6, with the Facilitator anchor scored highest (4-6) and the Regulator anchor

scored lowest (0-2).

In her 1995 study Sharp sought to classify respondents in terms of the two-factor

model, as briefly described in Section 5.5. As this study sought to investigate the

tripartite model a different classification system developed by Sharp (personal

communication, 1997) was used. This classification system rests upon the same

psychometric principles as the two-factor classification system. Classification is made on

the basis of patterns of responding to Facilitator/Regulator items, in this case regarding

routine of the infant at newborn and 6 months, a dimension both Raphael-Leff (1985a)

and Sharp (1995) found to be strongly associated with classification of maternal

orientation. The classification system is described below,
<table>
<thead>
<tr>
<th>Item 4a (routine at newborn)</th>
<th>Item 4b (routine at 6 months)</th>
<th>Initial classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-6 = Facilitator</td>
<td>4-6 = Facilitator</td>
<td>(Pure) Facilitator</td>
</tr>
<tr>
<td>0-2 = Regulator</td>
<td>0-2 = Regulator</td>
<td>(Pure) Regulator</td>
</tr>
<tr>
<td>3 = Unknown</td>
<td>3 = Unknown</td>
<td>(Pure) Unknown</td>
</tr>
<tr>
<td>4-6 = Facilitator</td>
<td>0-2 = Regulator</td>
<td>(Mixed) Facilitator/Regulator</td>
</tr>
<tr>
<td>0-2 = Regulator</td>
<td>4-6 = Facilitator</td>
<td>(Mixed) Facilitator/Unknown</td>
</tr>
<tr>
<td>4-6 = Facilitator</td>
<td>3 = Unknown</td>
<td>(Mixed) Facilitator/Unknown</td>
</tr>
<tr>
<td>3 = Unknown</td>
<td>4-6 = Facilitator</td>
<td>(Mixed) Facilitator/Unknown</td>
</tr>
<tr>
<td>0-2 = Regulator</td>
<td>3 = Unknown</td>
<td>(Mixed) Regulator/Unknown</td>
</tr>
<tr>
<td>3 = Unknown</td>
<td>0-2 = Regulator</td>
<td>(Mixed) Regulator/Unknown</td>
</tr>
</tbody>
</table>

The initial classifications are then collapsed as follows,

<table>
<thead>
<tr>
<th>Initial classification</th>
<th>Collapsed classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Pure) Facilitator group</td>
<td>(Collapsed) Facilitator</td>
</tr>
<tr>
<td>(Mixed) Facilitator/Unknown</td>
<td></td>
</tr>
<tr>
<td>(Pure) Regulator</td>
<td>(Collapsed) Regulator</td>
</tr>
<tr>
<td>(Mixed) Regulator/Unknown</td>
<td></td>
</tr>
<tr>
<td>(Pure) Unknown</td>
<td>(Pure) Unknown</td>
</tr>
<tr>
<td>(Mixed) Facilitator/Regulator</td>
<td>(Mixed) Facilitator/Regulator</td>
</tr>
</tbody>
</table>

To check the construct validity of classification, the typical responses of the groups to the Facilitator/Regulator items are compared. If the classification system is valid the Regulator group should more often endorse Regulator-type anchors (0-2), the
Facilitator group should more often endorse Facilitator-type anchors (4-6). In her modification of the classification system Sharp proposes that the Reciprocator group should endorse a combination of Regulator-type and Facilitator-type anchors, without obvious preference for one or other.

Advantages to using the P6-9MQ in the current study included the fact that it was a self-report research instrument suitable to be part of a test battery sent to participants. It had been used in this way in the study of Sharp (1995) which the current study aims to partially build upon. In addition, preliminary psychometric data were available regarding some aspects of reliability and validity. Sharp (1995) cited a standardised alpha coefficient (internal consistency) of .65, adequate face validity with a pilot group of 22 women (Sharp, Brugha & Cooper, 1992) and a discriminant validity co-efficient (specificity) of .76 when classifying according to the two-factor maternal orientation model. In Sharp’s study there was evidence of construct validity, such that women classified into Regulator and Facilitator groups responded to 23 of the 24 Regulator/Facilitator items in the direction predicted by the theory, 13 of which were significantly in the directions predicted. Sharp also found evidence of predictive validity, with predictions derived from the model regarding the differential precipitants of vulnerability to PND for each orientation borne out.

The biggest disadvantage of the P6-9MQ to date is the absence of psychometric data such as concurrent validity. The questionnaire appears in Appendix F. The scoring guide appears as Appendix L.
7.1.3 Pregnancy and Childbirth Examples - 1 (PCE-1)

The PCE-1 (Raphael-Leff, 1996) is a self-report instrument designed to measure women’s preferred mothering orientations during the first trimester, based upon the revised, tripartite maternal orientation model. It presents three cluster descriptions of the approach a woman from each of the three theoretical maternal orientation groups would prefer to take to mothering, as viewed in the third trimester of pregnancy. The respondent is asked to select which cluster description best matches her own, for example,

[Facilitator]  
Pregnancy is an exciting, special and important time for a woman. Ideally birth should be a natural shift for the baby from ‘inside’ to ‘outside’. That is why it is important for the woman not to have drugs or be separated from the baby after birth. I imagine that I will have a special understanding of the baby that no-one else can have because I carried he/she for nine months. I imagine that motherhood will be very satisfying.

There were a number of advantages to using the PCE-1 in the current study. Firstly, it was designed by Raphael-Leff and was derived directly from the theory. Secondly, it was designed specifically for the purposes of the current study, for use in research among community populations. Thirdly, it was a self-report instrument which was simple to understand and complete. Fourthly, because it was the secondary ante-natal measure of maternal orientation in the study, it was an independent criterion measure.
Analyses of associations between the primary measure (P6-9MQ) and the PCE-1 could provide preliminary concurrent validity data for the P6-9MQ.

Because the instrument had not been used before the primary disadvantage was the lack of data regarding psychometric properties. Though face and construct validity could be expected to be high because it was developed by Raphael-Leff, no psychometric data are available. The instrument appears in Appendix M.

7.2 Six week post-natal instruments

7.2.1 General Health Questionnaire-28 (GHQ-28)

The GHQ-28 (Goldberg, 1978) is a 28 item self-report questionnaire designed as a screening instrument for minor psychiatric morbidity among community and clinical populations. It samples symptoms across the following four domains - physical malaise (seven items), anxiety (seven items), social dysfunction (seven items) and depression (seven items). Each symptom description is followed by four statements indicating degree of severity of the symptom. Respondents answer by underlining the statement which most represents their experience, for example,

Have you recently

Al - been feeling perfectly well and in good health? Better Same Worse Much worse
than usual as usual than usual than usual

[0] [0] [1] [1]
Items are scored in a positive direction with a range of 0 to 1, with 0 corresponding to the absence of the symptom and 1 corresponding to the presence of the symptom (moderate or marked) leading to a maximum total score of 28.

There were many advantages to using the GHQ-28 in the current study. Firstly, it is a screening instrument designed for use in community and clinical populations, making it suitable for community-based research. Secondly, it is a brief, self-report instrument making it suitable to be part of a test battery sent to participants. In addition the 28 item form is even more suitable for the post-partum population being studied because it excludes two items of the GHQ-30 which refer to changes naturally occurring during pregnancy. Fourthly, the GHQ-28 has been widely used in research settings, including research into post-partum clinical status (Nott & Cutts, 1982; Sharp, 1995). Finally, considerable psychometric data are available from the manual and from studies which have subsequently used it in post-natal populations which suggest the instrument has adequate reliability and validity (Goldberg, 1978; Nott & Cutts, 1982). When the 28 item form was used with a post-natal population (Nott & Cutts, 1982) sensitivity was found to be 87%, specificity 83%, misclassification rate 16% and positive predictive value 53% when a clinical cutoff of between six and seven was used in relation to clinical diagnosis obtained by standardised psychiatric interview. ... As a result of the work of Nott and Cutts (1982) and Sharp (1995) a clinical cutoff of seven was adopted in this study. The questionnaire appears as Appendix H.
7.2.2 Edinburgh Post-natal Depression Scale (EPNDS)

The EPNDS (Cox et al, 1987) is a 10 item self-report questionnaire designed as a screening instrument for depression during the post-partum period among community populations. The EPNDS consists of 10 statements regarding symptoms associated with depression during the post-partum period each matched with four statements about the frequency with which these symptoms are experienced. Respondents answer by ticking the frequency statement which most represents their experience, for example,

1. I have been able to laugh and see the funny side of things
   [0] As much as I always could
   [1] Not quite so much now
   [2] Definitely not so much now
   [3] Not at all

Items are listed either positively such that a high score indicates clinically significant symptomatology, or in reverse to reduce the likelihood that respondents will answer all items in the same fashion. The maximum score is 3 and the range of scores is 0-3, leading to a maximum total score of 30.

There are many advantages to the use of the EPNDS in the current study. Like the GHQ-28 it is a screening instrument designed for use in community populations, and is well suited to this task because it is a brief, self-report instrument. Further, the EPNDS takes into account the fact that some mood disturbance is normal during the post-partum, hence measurement is tailored to this unique population. For these reasons the EPNDS
has been widely used in research into post-partum mood disturbance (Carothers & Murray, 1990; Sharp, 1995). Finally, there are considerable psychometric data available from the author and subsequent studies to indicate the instrument has adequate reliability and validity (Cox, et al, 1987). The authors cite a split-half reliability coefficient (internal consistency) of .88 and standardised alpha coefficient (internal consistency) of .87. They also cite a construct validity (sensitivity) coefficient of .86 and discriminant validity (specificity) coefficient of .78 (see Cox, et at, 1987). Carothers and Murray (1990) validated the EPNDS further on a community sample of 702 women from the U.K. at six weeks post-natally against Research Diagnostic criteria for depression and found a sensitivity of 67.7, specificity of 95.7 and positive predictive value of 66.6 using 12.5 as the clinical cutoff. There were no obvious disadvantages of using the EPNDS.

Following the work of Carothers and Murray (1990) and Sharp (1995) a clinical cutoff of 12 was selected for the current study to capture all possible cases of clinical level depression. The questionnaire appears as Appendix I.

7.2.3 Munich Diagnostic Checklist for DSM-III Major Depressive Episode (MDCL - MDE)

The MDCL-MDE (Hiller et al, 1990) is a standardised instrument for evaluating and assessing diagnoses of Major Depressive Episode according to DSM-III-R criteria among individuals from clinical populations. It consists of a checklist of the criteria from the DSM-III-R regarding Major Depressive Episode, each matched by three statements regarding the likely presence of the symptom. The checklist is completed by the clinician
on the basis of interview, observation and historical data either during or after consultation, for example,

(1) Depressed mood most of the day (nearly every day)  No  Probably  Yes

The scoring involves systematically scoring each criterion and evaluating hypotheses about the diagnosis on the basis of this evidence, leading to a conclusion about whether the patient meets full criteria for the diagnostic classification.

Advantages to using the MDCL-MDE in the current study include the fact that it is designed to be completed by the clinician or researcher, thereby making the measurement of depression more robust. It also enables the clinician or researcher to draw upon multiple sources of data including observation, clinical records and interview in making a diagnostic decision. Preliminary psychometric data suggest the instrument has some aspects of reliability and validity. The authors cite test-retest reliability coefficients (stability) over a four day period for lifetime diagnoses between .90 and .95. Because the instrument is a reproduction of DSM-III-R criteria administered in a standardised way, the authors also claim high face and construct validity, though no supporting evidence has been provided.

Disadvantages include the fact that this instrument has not been widely used in research and has limited psychometric data. A copy of the schedule appears in Appendix N.
7.3 Eight week post-natal instruments

7.3.1. Dyadic Mutuality Code (DMC)

The DMC (Censullo, 1994a) is a six item global behaviour rating scale designed to measure responsiveness and synchrony in early infant-mother interaction among community populations. The items sample six dimensions of mutual attention, positive affect, turn-taking, maternal pauses, clarity of infant cues and maternal sensitive responsiveness. Each dimension is scored according to the likely presence, duration or clarity of this feature of interaction. Two descriptors are used for this purpose, for example,

1. Positive Affect negative or neutral positive or very positive

   [1]  [2]

The instrument is completed by the clinician on the basis of standardised observation of infant-mother interaction of at least five minutes duration. All dimensions are scored in a positive direction, to a maximum of 2 with a range of 1-2, leading to a maximum global score of 12. Classification is as follows,

   Low responsivity =  6-8
   Moderate responsivity =  9
   High responsivity =  10-12

To establish skill in using the DMC the researcher attended two practically-based training sessions run by experienced trainer-clinicians (J. Smith et al). Interrater
reliabilities for scoring in this study were derived from a third training session in which
the researcher and one trainer-clinician (H. Whitfield) concurrently but independently
scored 10 protocols unrelated to this study. The co-efficient obtained was $r = 0.954222$.

These estimates of interrater reliability were considered to be high. There were a
number of advantages to using the DMC in the current study. Firstly, the instrument
operationalised infant-mother synchrony, a construct which was conceptually consistent
with Raphael-Leff's descriptions of one relational dimension along which women of
different maternal orientations could be expected to vary with their infants. Secondly, the
instrument was designed for use in clinical and research settings with community
populations and was being systematically used in local research at the time of writing
(Smith et al, 1997). Thirdly, because of this, intensive training was available to the
researcher from highly experienced users. Fourthly, the DMC was designed for use by the
clinician or researcher, overcoming criticisms of partiality and data contamination often
attracted by parent-report of infant temperament and behaviour. Fifthly, preliminary
psychometric data were available to suggest adequate reliability and validity. Interrater
reliability for this author, derived from the five month observations was high, with $0.89$ for
mutual attention, $0.82$ for positive affect, $0.85$ for turn taking, $0.87$ for maternal pauses, $0.97$
for infant clarity of cues and $0.96$ for maternal sensitive responsiveness; and $0.89$ for the
total score. Item discrimination derived from comparisons of subjects who were preterm
and subjects who were fullterm was acceptable, with discrimination of $0.95$ for mutual
attention, $0.87$ for positive affect, $0.76$ for maternal pauses and $0.76$ for maternal sensitivity.

Turn-taking and infant responsivity were moderate to low at $0.48$ and $0.19$ respectively. To
date few studies of the instrument’s psychometric properties have been published by
other users of the instrument with which to compare these figures. Concurrent validity derived from comparisons of Monadic Phase Scale and the DMC was significant, showing a moderate correlation of .49, which was acceptable given that the former instrument measures independent behaviours of infant and mother, while the latter measures synchrony.

Disadvantages included an absence of some psychometric data, particularly test-retest reliability (stability), the global nature of classifications in which data are subsumed and the lack of finer discrimination in scoring. In this study the cutoff ranges for classification into high, moderate and low synchrony groups followed those recommended by the author. A copy of the code appears in Appendix O.
CHAPTER 8 GENERAL RESULTS

8.1 Maternal orientation

Firstly, the TS were ascribed to a maternal orientation classification on the basis of responses to the P6-9MQ according to the system outlined in Section 7.1.2. Table 8.1 presents the distribution obtained.

Table 8.1
Frequency of Maternal Orientation classifications derived from the P6-9MQ (Sharp, 1995) (n=64)

<table>
<thead>
<tr>
<th>Maternal Orientation</th>
<th>(estimated %) of TS</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Collapsed) Facilitator</td>
<td>(49%)</td>
</tr>
<tr>
<td>(Collapsed) Regulator</td>
<td>(6%)</td>
</tr>
<tr>
<td>(Mixed) Facilitator/Regulator</td>
<td>(40%)</td>
</tr>
<tr>
<td>(Pure) Unknown</td>
<td>(5%)</td>
</tr>
</tbody>
</table>

As can be seen from Table 8.1, an estimated 49% of the TS were classified into the (Collapsed) Facilitator classification, with an estimated 40% classified into the (Mixed) Facilitator/Regulator classification. An estimated 6% and 5% of the TS were classified into the (Collapsed) Regulator and (Pure) Unknown classifications, respectively. This distribution can best be described as non-normal and bimodal.

Next the content and discriminant validity of these classifications were examined in terms of the characteristic ante-natal expectations and preferences of each orientation regarding labour, birth, the baby and self in early motherhood. To do this the distribution of responses made by the two largest classification groups, the (Collapsed) Facilitator and (Mixed) Facilitator/Regulator classifications to each of the 24 Facilitator/Regulator items, was examined.
The characteristic ante-natal expectations and preferences of Facilitators are captured in the Facilitator-type anchors of each of the Facilitator/Regulator items of the P6-9MQ. Those of Regulators are captured in the Regulator-type anchors of these items and those of a group whose origin is unclear, are captured by a combination of Facilitator-type and Regulator-type anchors. If the (Collapsed) Facilitator classification in this study is the Facilitator orientation of the theory, this classification would be expected to endorse predominantly Facilitator-type anchors (score between 0 and 2). In the case of the (Mixed) Facilitator/Regulator classification, Sharp (1997) and Raphael-Leff (personal communication, 1999) contend that a combination of Facilitator-type and Regulator-type anchors would be consistent with this group’s being composed of the Reciprocator orientation and a ‘conflicted group’, respectively. Table 8.2 presents the 24 Facilitator/Regulator items.

Table 8.2
The 24 Facilitator/Regulator items from the P6-9MQ and anchors of the Likert Scale for each

<table>
<thead>
<tr>
<th>Item</th>
<th>Regulator-type anchor</th>
<th>Facilitator-type anchor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Try &amp; imagine your labour?</td>
<td>mostly exhausting</td>
<td>mostly exciting</td>
</tr>
<tr>
<td>la Does it seem</td>
<td>controlled by midwife or doctor</td>
<td>controlled by you</td>
</tr>
<tr>
<td>lb Would you prefer it to be</td>
<td>mostly lying down</td>
<td>mostly walking about</td>
</tr>
<tr>
<td>lc Would you prefer to spend time</td>
<td>mostly monitored</td>
<td>mostly not monitored</td>
</tr>
<tr>
<td>ld Would you prefer to spend time</td>
<td>mostly have midwives and doctors</td>
<td>mostly left with partner, mum, friend</td>
</tr>
<tr>
<td>le Would you rather</td>
<td>show another side</td>
<td>behave like usual self</td>
</tr>
<tr>
<td>If Do you imagine you will</td>
<td>mostly started by my body</td>
<td>mostly started by baby</td>
</tr>
<tr>
<td>I think of my labour as being</td>
<td>my body needs to be trained</td>
<td>my body will know what to do</td>
</tr>
<tr>
<td>What are your feelings about the birth?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2b</td>
<td>I would prefer the birth to be</td>
<td>mostly I am dreading it</td>
</tr>
<tr>
<td>2c</td>
<td>Birth is mainly</td>
<td>helped by medical equipment as natural as possible</td>
</tr>
<tr>
<td>2d</td>
<td>Giving birth is</td>
<td>a special hospital event</td>
</tr>
<tr>
<td>2e</td>
<td>mainly full of pain</td>
<td>mainly full of pleasure</td>
</tr>
</tbody>
</table>

Table 8.2
The 24 Facilitator/Regulator items from the P6-9MQ and anchors of the Likert Scale for each continued

| 2f | What do you imagine the baby will be like at first? | mostly being delivered by midwife | mostly giving birth myself |
| 3a | taking over everything | fitting in to life easily |
| 3c | a stranger at first | someone you already know |
| 3e | mostly demanding | mostly needy & helpless |
| 3f | unable to tell you apart from others | able to tell who you are from early on |
| 3l | as mother you know what is best | born knowing what is best for him/her |

| 5a | How do you imagine yourself in the first few weeks? | mostly the same person as usual | mostly a mother |
| 5b | mostly getting baby into a routine | mostly adapting to the baby |
| 5c | mostly feeling trapped | mostly feeling fulfilled |
| 5d | mostly unchanged | very much changed by being a mother |
| 5e | mostly waiting for things to be normal | mostly enjoying the new way of life |

The frequencies of responding by both groups to the Facilitator/Regulator items of the P6-9MQ appear in Appendix P.

The (Collapsed) Facilitator classification endorsed predominantly Facilitator-type anchors on 21 of the 24 (88%) Facilitator/Regulator items. This group expected or showed a preference for (1a) labour to be predominantly exciting, (1c) that they would be walking about, (1e) that they would be left with partner/mother/friend, (1f) that they would behave like their usual selves and (1l) that the labour would be started by the baby.
About the birth they expected or showed a preference that (2a) their bodies would know what to do, (2b) were looking forward to it, (2c) that it would be natural, (2d) would be a personal event between mother and baby, (2e) would be pleasurable and that they (2f) would give birth by themselves. They expected or showed a preference that the baby would (3a) fit into their lives easily, (3c) be someone they already knew, (3e) be needy and helpless and (3f) know who they were from early on. About themselves in early motherhood they expected or showed a preference that they would (5a) be mostly mothers, (5b) adapt to the baby, (5c) feel fulfilled, (5d) feel changed by motherhood and (5e) enjoy the new way of life. On the remaining 3 (12%) items the more of the Facilitator group endorsed the Regulator-type anchor than the Facilitator-type anchor, indicating they expected or showed a preference that the labour (1b) would be controlled by the midwife/doctor and (1d) monitored. They also expected or showed a preference that (3l) they would know what was best for the baby once he or she was born.

The (Mixed) Facilitator/Regulator classification endorsed predominantly Facilitator-type anchors on 16 of the 24 (67%) Facilitator/Regulator items. They expected or showed a preference that (1a) the labour would be exciting, (1b) the labour would be controlled by them, (1c) they would be walking about, (1e) they would be left with partner/mother/friend and (1f) they would behave like their usual selves. About the birth they expected or showed a preference that (2a) their bodies would know what to do, (2b) were looking forward to it, (2c) that it would be natural and (2d) that it would be a personal event between mother and baby. They expected or showed a preference that the baby (3c) would be someone they already knew, (3e) would be needy and helpless, (3f) would be able to tell who they were from early on and (3l) would be born knowing what
was best for he or she. About early motherhood they expected or showed a preference that (5a) they would be mostly mothers, (5c) feel fulfilled, (5d) feel changed by motherhood and (5e) enjoy the new way of life. The Mixed Facilitator/Regulator group endorsed the Regulator-type anchor more often than the Facilitator-type anchor on 7 (29%) items. This indicated they expected or showed a preference that (1d) they would be monitored during the labour, (1I) that it would be started by their own bodies, (2e) that the birth would be painful, (3a) that the baby would initially take over everything, and that (5b) they would have to establish the baby in a routine. On one item this group endorsed the Facilitator-type anchor and the Regulator-type anchor equally, suggesting that approximately half imagined the baby would be (2I) delivered by themselves while the other half imagined the baby would be delivered by the midwife.

Next, the statistical significance of these distributions was tested using two (levels of maternal orientation classification) by two (levels of response to items) crosstabulation tables. As before, Chi square and Fishers Exact statistics were taken as the test statistics. Because 24 independent analyses were made, increasing the likelihood of obtaining a significant result by chance, the higher alpha criterion of p<.01 was set.

The distributions of responses were generally not significant. This included expectations or preferences that (1a) the labour would be exciting rather than exhausting, Chi square (1)=.182, p>.01; (1b) that it would be controlled by self rather then by others, Chi square (1)=.631, p>.01; (1c) that they would be walking about rather than lying down, Chi square (1)=.101, >.01; (1d); that they would be monitored rather than not monitored, Chi square (1)=4.132, p>.01; (1e) that they would be left with partner/mother/friend rather than left with midwife/doctor, Fishers Exact (1)=.022, p>.01;
(1f) that they would behave like usual self rather than show another side, Chi square (1)=.74, p>.01 and (1I) that the labour would be started by the baby rather than by their own body, Chi square (1)=2.159, p>.01.

The distributions of responses regarding the birth were not significant, including expectations and preferences about (2a) whether their body would know what to do rather than need training, Fishers Exact (1)=.092, p>.01; (2b) whether they were looking forward rather than dreading it, Fishers Exact (1)=.664, p>.01; (2c) whether they would prefer it to be natural rather than require medical equipment, Fishers Exact (1)=.206, p>.01; (2d) whether it would be a personal rather than a hospital event, Fishers Exact (1)=1.154, >.01; (2e) whether it would be pleasurable rather than painful, Chi square (1)=2.165, p>.01 and (2I) whether they would give birth by themselves rather then be delivered by the midwife, Fishers Exact (1)=.512, p>.01.

The distributions of responses regarding the baby were not significant, including expectations and preferences about (3a) whether he or she would fit easily into life rather than take over, Chi square (1)=.196, p>.01; (3c) whether the baby would be someone known rather than a stranger, Fishers Exact (1)=1.687, p>.01; (3e) whether the baby would be needy and helpless rather than demanding, Fishers Exact (1)=.440, p>.01; (3f) whether the baby would know mother rather than not know mother, Fishers Exact (1)=.547, p>.01 and (3l) whether the baby would know what was best for he or she rather then mother knowing best, Chi square (1)=.266, p>.01.

The distributions of responses regarding self in early motherhood were significant on one item regarding the (5b) establishment of a routine for the baby rather than adapting to the baby, Chi square (1)=7.644, p<.01. This indicated that the (Collapsed)
Facilitator classification expected to adapt to the baby around twice as often as they expected to establish the baby in a routine; but the (Mixed) Facilitator/Regulator classification expected to establish the baby in a routine almost three times as often as they expected to adapt to the baby. Other responses were not significant including expectations and preferences about whether (5a) they would be a mother rather than the same person, Fishers Exact (1)=.864, p>.01; (5c) feel fulfilled rather than feel trapped, Fishers Exact (1)=.048, p>.01; (5d) be changed by motherhood rather than unchanged, Fishers Exact (1)=.992, p>.01 and (5e) whether they would be waiting for normality to return rather than enjoying the new life, Fishers Exact (1)=.506, p>.01.

Overall, the distribution of ante-natal expectations and preferences of the (Collapsed) Facilitator classification were consistent with predictions of the Facilitator orientation. The distribution of ante-natal expectations and preferences of the (Mixed) Facilitator/Regulator classification were consistent with predictions of the Reciprocator orientation or the ‘conflicted’ group. These results indicated that the P6-9MQ had good content validity insofar as it sampled the ante-natal expectations and preferences regarding labour, birth, baby and self in early motherhood relevant to the construct of maternal orientation and in that classifications responded in predicted ways. However, the P6-9MQ had low discriminant validity in that these distributions were significant on only one item regarding routine of the baby. The (Collapsed) Facilitator classification expected to adapt to the baby around twice as often as they expected to establish the baby in a routine; but the (Mixed) Facilitator/Regulator classification expected to establish the baby in a routine almost three times as often as they expected to adapt to the baby.
Participants were also ascribed to a maternal orientation classification on the basis of responses to the PCE-1, according to the directions in Chapter 6.1.3. Table 8.3 presents the distribution of classifications derived.

Table 8.3
Frequency of Maternal Orientation classifications derived from the PCE-1 (n=64)

<table>
<thead>
<tr>
<th>Maternal Orientation</th>
<th>(estimated %) of TS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitators</td>
<td>(15%)</td>
</tr>
<tr>
<td>Regulators</td>
<td>(1%)</td>
</tr>
<tr>
<td>Reciprocators</td>
<td>(76%)</td>
</tr>
</tbody>
</table>

It can be seen from Table 8.3 that an estimated 76% of the TS were classified Reciprocators, with almost all of the remainder classified Facilitators. This distribution can best be described as normal, with a concentration of the sample under the bell of the normal curve.

To examine the relationship between maternal orientation classifications derived from the P6-9MQ and PCE-1, a four (levels of classification from P6-9MQ) by three (levels of classification from PCE-1) crosstabulation table was used with the Phi statistic taken to correct for violations of Chi square assumptions. This analysis was not significant, Phi (6)=.2174, p>.01. There was no evidence of concurrent validity for the P6-9MQ. Because the maternal orientation classifications derived from the P6-9MQ were not well differentiated, it was deemed not valid to compare the classifications on the GHQ-28, EPNDS, MDCL-MDE and DMC as planned.
8.2 Post-partum minor psychiatric symptomatology

To ascertain the prevalence of minor psychiatric symptomatology in this study the distribution of clinical status was examined. This was followed by an analysis of the socio-demographic profile of the clinical and non-clinical groups in order to identify any socio-demographic variables which should be used as controls. As subtle and theoretically meaningful patterns of responding were evident in the P6-9MQ, suggesting the instrument captured potentially meaningful experiences of participants, it was deemed valid to compare the clinical and non-clinical groups derived from each dependent variable in the distribution of their responses to the Facilitator/Regulator items. No particular predictions were made. The distribution of total scores on the first of these, the GHQ-28, is presented in Figure 8.1.

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**Figure 8.1**

Frequency distribution of GHQ-28 total scores (Goldberg, 1978) (n=49)
As Figure 8.1 shows, 14 participants or an estimated 29% of the TS reported having clinically significant psychiatric symptoms on the GHQ-28. In order to develop demographic profiles of these participants on the other variables, the clinical group and non-clinical group, i.e. those scoring seven or over and those scoring less than seven, were compared on each demographic variable. Year of birth was analysed using a two tailed t-test. Categorical variables were analysed using two (levels of clinic status) by two (levels of demographic variable) crosstabulation tables and in the case of country of birth, a two by three table. As before Chi square, Fishers Exact and Phi statistics were taken for each of these and the alpha level was set at p<.01.

Analyses of demographic variables showed there were no significant difference between groups on year of birth, t(44)=.812, p>.01(2 tail); and distributions of responses were not significant on country of birth when the levels of Australian, Asian and other were used, Phi (4)=.3539, p>.01; marital status, Fishers Exact (1)=.1364, p>.01; living arrangements, Fishers Exact (1)=.1377, p>.01; level of education, Chi square (1)=.1528, p>.01; occupation, Fishers Exact (1)=.1806, p>.01; religion, Fishers Exact (1)=.0838, p>.01; number of pre-existing children, Chi square (1)=.2052, p>.01; planning of pregnancy, Fishers Exact (1)=.1732, p>.01 or pregnancy complications, Chi square (1)=.1595, p>.01.

Analyses of the clinical and non-clinical groups' distributions of responding to Facilitator/Regulator items on the P6-9MQ was made in the same way.

The distribution of expectations and preferences for the labour were not significant, including (1a) whether it would be exciting rather than exhausting, Fishers
Exact (1)=3.146, p>.01; (1b) whether it would be controlled by self rather than by others, Chi square (1)=.229, p>.01; (1c) whether they would be walking about rather lying down, Fishers Exact (1)=.692, >.01; (1d) whether it would be monitored rather than not monitored, Fishers Exact (1)=.621, p>.01; (1e) whether they would be left with partner/mother/friend vs left with midwife/doctor, Fishers Exact (1)=.835, p>.01; (1f) whether they would behave like usual self rather than show other side, Fishers Exact (1)=.088, p>.01 and (1I) whether the labour would be started by baby rather then by own body, Fishers Exact (1)=.008, p>.01.

About the birth, the distribution of expectations and preferences were not significant, including (2a) whether their body would know what to do rather then need training, Fishers Exact (1)=3.360, p>.01; (2b) whether they were looking forward rather than dreading it, Fishers Exact (1)=.149, p>.01; (2c) whether they would prefer it to be natural rather then require medical equipment, Fishers Exact (1)=.314, p>.01; (2d) whether it would be a personal vs hospital event, Fishers Exact (1)=.389, >.01; (2e) whether it would be pleasurable rather than painful, Chi square(1)=.676, p>.01 and (2I) whether they would give birth by themselves rather then be delivered by the midwife, Fishers Exact (1)=1.627, p>.01.

The distribution of expectations and preferences regarding the baby were not significant, including (3a) whether he or she would fit easily into life rather then take over, Fishers Exact (1)=.875, p>.01; (3c) whether he or she would be a stranger rather than someone known, Chi square(1)=4.081, p>.01; (3e) whether he or she would be needy and helpless rather then demanding, Fishers Exact (1)=.330, p>.01; (3f) whether he or she would know mother rather then not know, Fishers Exact (1)=.338, p>.01 and (3g)
whether he or she would be born communicating rather than not communicating, Chi square (1)=.870, p>.01; (3I) whether he or she would know what was best for he or she rather than mother knowing best, Chi square (1)=.031, p>.01.

About self during early motherhood the distribution of expectations and preferences was not significant, including (5a) whether they would be a mother rather then the same person, Fishers Exact (1)=2.445, p>.01; (5b) whether they would adapt to the baby rather then establish the baby in a routine, Chi square (1)=.515, p>.01; (5c) whether they would feel fulfilled rather then feel trapped, Fishers Exact (1)=.083, p>.01; (5d) whether they would be changed by motherhood rather then unchanged, Fishers Exact (1)=1.967, p>.01 and (5e) whether they would enjoy the new way of life rather than wait for things to return to normal, Fishers Exact (1)=.009, p>.01.

These results suggest that the clinical and non-clinical groups derived from the GHQ-28 did not have significantly different patterns of demographic characteristics or of ante-natal expectations and preferences regarding the labour, birth, infant and self as mother on the P6-9MQ.

8.3 Post-partum minor depressive symptomatology

To examine the prevalence of minor depressive symptomatology in this study, the distribution of clinical status was examined, followed by analysis of the socio-demographic profile of the clinical and non-clinical groups. Again, in recognition of the potentially meaningful if not significant, patterns of responding evident in the P6-9MQ, the distributions of responses to the 24 Facilitator/Regulator items by the clinical and
non-clinical groups were compared. No particular predictions were made. The distribution of total scores on the EPNDS is presented in Figure 8.2.

As Figure 8.2 shows, seven participants or an estimated 14% of the TS reported having clinically significant depressive symptoms on the EPNDS. The distribution of demographic variables was examined using two by two or two by three crosstabulation tables. Again, Chi square, Fishers Exact and Phi statistics were taken for each of these and the alpha level was set at .01.

As in the case of the GHQ-28, the clinical and non-clinical groups did not differ significantly on socio-demographic variables. There were no significant differences between the groups in year of birth $t(44)=.11$, $p>.01$ (2 tail); and distributions of the
following variables were also not significant - country of birth (Australian, Asian, other), Phi (2) = .3102, p > .01; marital status, Fishers Exact (1) = .0996, p > .01; living arrangements, Fishers Exact (1) = .0744, p > .01; level of education, Fishers Exact (1) = .1923, p > .01; occupation, Fishers Exact (1) = .2315, p > .01; planning of pregnancy, Fishers Exact (1) = .2012, p > .01; pregnancy complications, Fishers Exact (1) = .3473, p > .01 (though this neared significance at p = .02) and number of pre-existing children, Fishers Exact (1) = .1585, p > .01.

Analyses of distribution of responses to Facilitator/Regulator items on the P6-9MQ by the clinical and non-clinical groups were made in the same way.

Distributions of expectations and preferences regarding the labour were not significant. This included (1a) whether the labour would be exciting rather than exhausting, Fishers Exact (1) = .1601, p > .01; (1b) whether it would be controlled by self rather than by others, Fishers Exact (1) = .1830, p > .01; (1c) whether they would be walking about rather than lying down, Fishers Exact (1) = .2699, p > .01; (1d) whether they would behave like usual self rather than show another side, Fishers Exact (1) = .022, p > .01 and (1f) whether the labour would be started by baby rather than by their own body, Fishers Exact (1) = .521, p > .01. The distribution regarding (1e) whether they would be left with mother/partner/friend rather than midwives/doctors during the labour was significant, Fishers Exact (1) = 13.139, p < .01. Women in the clinical group expected to be left with midwives/doctors, but women in the non-clinical group almost exclusively expected to be left with partner/mother/friend.

The distributions of expectations and preferences regarding the birth were not significant, including (2a) whether their body would know what to do rather than need
training, Fishers Exact (1)=4.334, p>.01; (2b) whether they were looking forward rather than dreading it, Fishers Exact (1)=.037, p>.01; (2c) whether it would be natural rather than require medical equipment, Fishers Exact (1)=.329, p>.01; (2d) whether it would be a personal rather than a hospital event, Fishers Exact (1)=.211, >.01; (2e) whether it would be pleasurable rather than painful, Fishers Exact (1)=2.959, p>.01 and (2f) whether they would give birth by themselves rather than be delivered by the midwife, Fishers Exact (1)=.001, p>.01.

The distributions of expectations and preferences regarding the baby were not significant, including (3a) whether he or she would fit easily into their lives rather than take over, Fishers Exact (1)=1.984, p>.01; (3c) whether he or she would be someone known rather than a stranger, Fishers Exact (1)=3.561, p>.01; (3e) whether he or she would be needy and helpless rather than demanding, Fishers Exact (1)=1.245, p>.01; (3f) whether he or she would know mother rather than not know, Fishers Exact (1)=.085, p>.01; (3g) whether he or she would be born communicating rather than not communicating, Fishers Exact (1)=.002, p>.01 and (3l) whether he or she would know what was best for he or she rather then mother knowing best, Fishers Exact (1)=2.061, p>.01.

The distributions of expectations and preferences regarding self during early motherhood were not significant, including (5a) whether they would be a mother rather than the same person, Fishers Exact (1)=1.246, p>.01; (5b) whether they would adapt to the baby rather then establish the baby in a routine, Fishers Exact (1)=.180, p>.01; (5c) whether they would feel fulfilled rather then trapped, Fishers Exact (1)=.522, p>.01; (5d) whether they would be changed by motherhood rather then unchanged, Fishers Exact
(1)=.060, p>.01 and (5e) whether they would enjoy the new way of life rather than wait to get back to normal, Fishers Exact (1)=5.933, p>.01.

These results indicated that the clinical and non-clinical groups derived from the EPNDS did not have significantly different patterns of demographic characteristics or of ante-natal expectations and preferences regarding the labour, birth, infant and self as mother on the P6-9MQ. However, the distribution of responses regarding whom they would prefer to be left with during the labour was significant, with the clinical group expecting to be left with midwives/doctors, and women in the non-clinical group almost exclusively expecting to be left with partner/mother/friend.

8.4 Post-partum depression diagnosis

Only two of the five participants or an estimated 3% of the TS who had showed clinically significant depressive symptoms and agreed to further assessment of caseness, met criteria for Major Depressive Episode according to the MDCL-MDE. Additionally, one of the non-diagnosed participants had returned an incomplete P6-9MQ, hence her P6-9MQ data had to be excluded. Because only two women were diagnosed and two were non-diagnosed, it was deemed not valid to statistically analyse patterns of responding to the P6-9MQ by the diagnosed and non-diagnosed groups. Instead the frequency with which each group endorsed a Facilitator-type, midpoint or Regulator-type response on the 24 Facilitator/Regulator items in the P6-9MQ, was examined. Table 8.4 presents these frequencies.
Table 8.4
Frequency of endorsing Regulator-type, Unknown and Facilitator-type Responses on the 24 Facilitator/Regulator Items of the P6-9MQ, for participants diagnosed with Major Depressive Episode and those not diagnosed, derived from the MDCL-MDE (n=4)

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>n</th>
<th>Classification</th>
<th>Regulator-type response (between 0-2)</th>
<th>Unknown response (3)</th>
<th>Facilitator-type response (between 4-6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosed participants 2</td>
<td>Col</td>
<td>Fac/Reg (41%)</td>
<td>(13%)</td>
<td>(46%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mixed</td>
<td>Fac/Reg (46%)</td>
<td>(17%)</td>
<td>(37%)</td>
<td></td>
</tr>
<tr>
<td>Non-diagnosed participants 2</td>
<td>Mixed</td>
<td>Fac/Reg (29%)</td>
<td>(33%)</td>
<td>(38%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mixed</td>
<td>Fac/Reg (38%)</td>
<td>(24%)</td>
<td>(38%)</td>
<td></td>
</tr>
</tbody>
</table>

As Table 8.4 shows, one of the mothers diagnosed had endorsed 87% of the 24 Facilitator/Regulator items in the direction of either a Facilitator-type or Regulator-type response, with a relatively even spread between the two extremes. The midpoint had been endorsed on 13% of the items only. The other had endorsed 83% of the Facilitator/Regulator items in the direction of a Facilitator-type or Regulator-type response, also with an even spread between the two extremes. This participant had endorsed the midpoint on only 17% of the items.

One of the non-diagnosed participants had endorsed 67% of the Facilitator/Regulator items in the direction of Facilitator-type or Regulator-type responses, and the remaining 33% at the midpoint. Similarly, the other had endorsed 76% of the Facilitator/Regulator items in the direction of Facilitator-type or Regulator-type responses, with equal endorsement of each, endorsing the midpoint on 24% of the items.

Overall, the diagnosed participants tended to show polarised patterns of ante-natal expectations and preferences regarding the labour, birth, infant and self in early
motherhood on the P6-9MQ and non-diagnosed participants tended to show more evenly spread views.

8.5 Infant-mother synchrony

The distribution of global scores from the DMC is presented in Figure 8.3.

Because of the small number of participants here, data are presented and described in the same way as that of the MDCL-MDE. The distribution of clinical status is presented first, followed by frequencies of endorsing a Facilitator-type, midpoint or Regulator-type response on the 24 Facilitator/Regulator items of the P6-9MQ. The distribution of global scores on the DMC for the 10 participants is presented in Figure 8.3.

As Figure 8.3 shows seven participants or an estimated 70% of the TS scored in the high synchrony range (10-12), two participants or an estimated 20% of the TS scored in the moderate range (9) and one or an estimated 10 % of the TS scored in the low
synchrony range (6-8). This distribution was normal but negatively skewed. The frequencies with which each group endorsed Facilitator-type, midpoint or Regulator-type responses on the 24 Facilitator/Regulator items of the P6-9MQ, are presented in Table 8.5.

It was notable that the only participant classified as having low synchronous interaction with her infant, had endorsed predominantly mid-point and Facilitator-type responses. Further inspection showed that most of her Facilitator-type responses were on items regarding the labour and birth, but most of her midpoint responses were on items regarding the baby and self during early motherhood.

Overall, the patterns of ante-natal expectations and preferences regarding labour, birth, the baby and self during early motherhood expressed by the clinical and non-clinical groups were not clearly different.
8.6 Summary

Preliminary classifications of maternal orientation derived from P6-9MQ showed that an estimated 49% of the TS were (Collapsed) Facilitators and an estimated 40% were (Mixed) Facilitator/Regulators. The (Collapsed) Facilitator group showed patterns of ante-natal expectations and preferences regarding the labour, birth, the infant and self during early motherhood consistent with those predicted by the revised maternal orientation model for Facilitators. Because Sharp (1997) and Raphael-Leff (personal communication, 1999) propose different interpretations of the patterns of responding shown by the (Mixed) Facilitator/Regulator classification, the patterns were potentially consistent with either Reciprocator orientation or a ‘conflicted’ group. This suggested the P6-9MQ had fair content validity. However, the groups could not be well discriminated on the basis of these patterns, excepting in their expectations regarding the routine of the baby. The (Collapsed) Facilitator classification expected to adapt to the baby around twice as often as they expected to establish the baby in a routine; but the (Mixed) Facilitator/Regulator classification expected to establish the baby in a routine almost three times as often as they expected to adapt to the baby. There was no association between classifications derived from the P6-9MQ and PCE-1, and thus no evidence of concurrent validity of the P6-9MQ. Because the P6-9MQ showed poor discriminant validity, the (Collapsed) Facilitator and (Mixed) Facilitator/Regulator groups were not compared on the dependent variables as planned. Instead, socio-demographic profiles of the clinical and non-clinical groups derived from the GHQ-28 and EPNDS were developed, and the clinical and non-clinical groups derived from each of the dependent variables were compared in their ante-natal expectations and preferences.
An estimated 29% of the TS were classified as having clinically significant minor psychiatric symptoms on the basis of GHQ-28 scores. The clinical and non-clinical groups did not differ in distributions of socio-demographics or of ante-natal expectations and preferences. Thus the P6-9MQ did not appear associated with clinical status on the GHQ-28.

An estimated 14% of the TS were classified as having clinically significant minor depressive symptoms on the basis of the EPNDS. Clinical and non-clinical groups did not differ in distributions of socio-demographics or ante-natal expectations and preferences excepting whom they would be left with during labour. The clinical group expected to be left with partner/mother/friend around as often as they expected to be left with midwives/doctor, and women in the non-clinical group almost exclusively expected to be left with partner/mother/friend. This suggested that the P6-9MQ was not associated with clinical status on the EPNDS.

Only an estimated 3% or two participants with clinically significant depressive symptoms were diagnosed with a Major Depressive Episode. Both of these showed relatively polarised patterns of ante-natal expectations and preferences regarding labour, birth, the infant and self during early motherhood. Both the non-diagnosed participants showed relatively balanced patterns of expectations and preferences.

An estimated 10% or one of the TS showed low synchrony in their interaction with their infants. Participants classified low, moderate and high synchrony did not show clear patterns of ante-natal expectations and preferences.
CHAPTER 9 DISCUSSION

The broad aim of this study was to investigate some different courses of the childbirth transition to maternity, and particular concomitants of these. In doing so this work attempted to contribute to the existing literature, in a number of ways. Firstly, it aimed to explore alternative conceptualisations of the transition to those underpinned by medical models, by adopting a developmental-transactional, psychodynamic perspective. Secondly, it attempted to measure complex, subjective experiences in an objective manner. Thirdly, it aimed to complement methodological traditions in which data from large-scale group comparisons have featured, to explore some of the ways in which documented effects are mediated within the individual.

Raphael-Leff’s (1993) revised maternal orientation model was the conceptual tool used to guide this study. The model assumes that the childbirth transition to maternity has unique subjective meanings for each woman and will follow a unique course, mediated by the particular constellation of internal and external variables surrounding her. The psychological approach or strategies a woman employs to cope with the transition are also unique, are detectable during late pregnancy and foreshadow both the subjective meaning and coping strategies the woman will utilise in the early post-partum period. Detection of these approaches during pregnancy will assist the observer to conceptualise the individualised course a woman’s transition is likely to take, combinations of variables likely to precipitate increased risk of various indices of diminished wellbeing, and periods in which this is likely to occur.
This study built upon previous work, guided by the model of Raphael-Leff (1985a), as extended by Scher and Blumberg (1992) and Sharp (1995) in two ways. The first was in the area of measurement, namely to explore the psychometric properties of one instrument used to measure maternal orientation in the ante-natal period, the P6-9MQ (Raphael-Leff, 1983; Sharp, 1995). Specifically, this work aimed to examine the content, discriminant and concurrent validity of the instrument and distribution of classifications obtained. The second was to test specific predictions derived from the model regarding the differential timing of increased risk to certain indices of diminished wellbeing: minor psychiatric symptomatology, minor depressive symptomatology, depression diagnosis and low infant-mother synchrony in the post-partum.

A prospective design was employed with a community-based sample of 73 primiparous and multiparous women, recruited in the third trimester of pregnancy from ante-natal clinics of a large metropolitan hospital in Melbourne, Australia. Ante-natal maternal orientation was measured between 36 and 41 weeks. At six weeks post-partum, minor psychiatric symptomatology, minor depressive symptomatology and depression diagnosis were measured. At eight weeks post-partum infant-mother synchrony was measured in a subset of the sample.

It was expected that women would be classifiable into one of three different 'a priori' maternal orientations on the basis of distinctive and differentiable sets of expectations and preferences regarding labour, birth, the infant and self in early motherhood, consistent with the theory. Finally, it was expected that these orientations would be associated with differential timing of increased risk of developing minor
psychiatric symptomatology, depressive symptomatology, depression diagnosis and low-synchronous infant-mother interaction in the post-partum, consistent with the theory.

The following discussion will deal with issues of generalisability based upon sampling, followed by results pertaining to each of the study hypotheses. Recommendations for future research and clinical implications will be considered in Chapter 10.

9.1 Generalisability of results

The total sample (TS) which completed the ante-natal assessment was representative of the patient population which had attended the clinics between early 1995 and mid 1996 in marital status, but was constituted of women who were significantly younger and less often Asian-born. It seems likely that the lack of representativeness of the TS along two of the three socio-demographic variables measured, was not coincidence. Anecdotal evidence from ante-natal clinic staff suggested that a large proportion of the Asian women attending the clinics were older and spoke little English, having migrated as adults from their countries of birth. Because English language was a criterion of recruitment these women would not have been eligible to participate in the study and would have been selected out of the TS. The resulting demographic bias suggested that caution was required when generalising results derived from the ante-natal data to Asian-born or older women. The underrepresentation of Asian-born women in the TS also had implications for the measurement of maternal orientation. Sharp (1995) found an association between maternal orientation classification and some social and cultural variables, namely ethnicity, socio-economic status and level
of education. This was reflected in the overrepresentation of Asian-born and Indian-born women, and of women of lower socio-economic status and lower educational attainments in her Regulator group. Sharp proposed a Regulator-type approach to mothering might more often be endorsed in these ethnic and cultural groups, leading to this overrepresentation.

Around 70% of the TS complied with the six week post-natal assessment of minor psychiatric symptomatology, minor depressive symptomatology and depression diagnosis. Given the substantial size of this participant attrition, the demographics of the non-completer group (NCG) and completer group (CG) were analysed to explore some reasons why this attrition might have occurred and to ascertain the impact it had upon the representativeness of the CG. The analysis proved useful on both counts. The NCG did not differ from the CG on any of the 10 socio-demographic variables measured excepting country of birth, such that there was an overrepresentation of Australian-born women in it. Again, it seems likely that ethnic and/or culture-related variables were associated with this effect, such as difficulty for women born in other countries understanding the study requirements because, for example, of unfamiliarity with western research paradigms, or because of cultural attitudes toward privacy during confinement. Though this indicated that the CG was generally representative of the TS, it suggested caution was required in generalising results from this stage to women born in other countries, and reinforced the value of considering country of birth as a control variable in the analysis of maternal orientation distribution.

A subset of 10, randomly selected participants completed the eight week post-natal assessment of infant-mother synchrony. Again, the socio-demographics of the
infant-mother subset (IMS) and the remainder of the TS were analysed, to ascertain representativeness. The IMS did not differ from the remainder of the TS on any socio-demographic variable. Hence the only caution in generalising implied, was to Asian-born women.

9.2 Classification of maternal orientation

9.2.1 General distribution

The first hypothesis regarding classification of women into 'a priori' theoretical maternal orientations on the basis of ante-natal expectations and preferences regarding labour, birth, the infant and self in early motherhood as measured by the P6-9MQ, was partially supported. In accounting for this conclusion the distribution of classifications derived from the P6-9MQ will be discussed first, followed by discussion of particular classifications within the distribution and the instrument’s content and construct validity.

Participants were classified into (Collapsed) Facilitator, (Collapsed) Regulator, (Mixed) Facilitator/Regulator and (Pure) Unknown orientations on the basis of responses to items 4a and 4b, following the study by Sharp (1995) and subsequent suggestions by her regarding classification using her instrument in this study (Sharp, personal communication, 1997). This produced a predominantly bimodal distribution in which an estimated 89% of the TS was classified into one of the two dominant groups, but with potentially meaningful variations around these. This distribution was reminiscent of the distribution obtained by Raphael-Leff (1985) using an instrument and classification system originally designed to measure the two-factor model, the FRQ. Raphael-Leff (1985a) found that all the participants in her convenience, middle-class sample from the
U.K. fell into one of the two dominant groups. However, the predominantly bimodal distribution is not consistent with the revised, three-factor model (Raphael-Leff, 1993) or with the other conceptual issues raised by the author, though it should be acknowledged that the instrument was not originally designed to measure three orientations.

Raphael-Leff (1983; 1985; 1993) has consistently conceptualised maternal orientation as distributed in community rather than clinical populations and has recently drawn conceptual links between maternal orientation classification and attachment classification in adults (Henry, personal communication, 1998) (Reciprocator-Autonomous, Regulator-Dismissing, Facilitator-Preoccupied), which is also proposed to be distributed in community populations and which is known to be normally distributed in these. Studies of stability (Bakermans-Kranenberg & van Ijzendoorn, 1993), concordance (Grossman et al, 1988; Ainsworth & Eichberg, 1991; Beniot & Parker, 1994; George & Solomon, 1989; 1996; Zeanah, Beniot, Barton, Regan, Hirshberg & Lipsitt, 1993) and prediction (Fonagy, Steele, Steele, Moran & Higgitt, 1991; Steele, Steele & Fonagy, 1996) of adult attachment attest to the robust nature of these estimates. Despite the tendency for maternal orientation to appear bimodally distributed in the literature thus far, there may be more and potentially meaningful variability in maternal orientation not yet reflected in empirical work. This hypothesis has received preliminary support from studies in which samples of greater ethnic diversity have been employed. In their study of a community-based Israeli sample, Scher and Blumberg (1992) found that almost a third of the sample could be classified into smaller third and fourth groups. Consistent with this, Sharp initially found that 62% of her socio-demographically representative sample for the U.K. could not be classified into one of two dominant
classification groups. Though Sharp opted to re-classify this group into either Facilitator or Regulator classifications using a statistical model of best fit thereby obscuring potentially meaningful variation, the representativeness of this sample and rigour of the study makes this finding notable.

Taken together the distributions obtained in this and previous studies provide preliminary evidence that there may be greater and more meaningful variation in maternal orientation than has yet been reflected in empirical work. This finding is consistent with the conceptual revisions Raphael-Leff (1993) has made to the model, based upon systematic and close observations. There is also preliminary evidence that, along with any individual differences, variation may be associated with cultural variables. A major obstacle in deriving accurate estimates of the distribution has been the tendency to rely upon one of two instruments, the FRQ and P6-9MQ, which were designed to measure maternal orientation in terms of the two-factor model, and in which classification systems congruent with this conceptualisation are employed. It seems likely that these instruments have constrained accurate measurement, as the dominance of the three-way classification system used to classify infant attachment behaviour in the SS initially obscured discovery of the fourth, disorganised-disorientated classification (Feeney & Noller, 1996; Main & Solomon, 1986; Moore, 1997). Though the current study went some way toward exploring variation in the distribution, this effort was limited by the reliance upon an instrument designed to measure the two-factor model. Clearly, further empirical work is needed to develop instruments and classification systems sensitive to and discriminating of the types of variation described in the revised model (Raphael-Leff, 1993; Raphael-Leff, personal communication, 1999).
9.2.2 Specific classifications within the distribution

In this study the (Collapsed) Facilitator classification group was the largest, constituting an estimated 49% of the TS. Participants were ascribed to this group on the basis of endorsing both items 4a or 4b of the P6-9MQ in a Facilitator-type manner (4-6), or one item in this manner and the other in an Unknown manner (3). Because of the conceptual and statistical similarity between a response of 3 and responses of 4, 5, or 6 to an item, collapsing these classifications was expected to dilute but not seriously confound the (Collapsed) Facilitator classification group. It was deemed valid to compare the (Collapsed) Facilitator classification group of this study with Facilitator classification groups derived from other studies.

As in the case of distribution, the size of the (Collapsed) Facilitator classification group (49%) obtained here was similar to that obtained by Raphael-Leff (1985a) studying a western, predominantly middle-class, Anglo-Saxon and Anglo-Celtic sample, where the Facilitator classification group was constituted 41% of the sample. However, in their Israeli, community-based sample Scher and Blumberg (1992) obtained a lower figure of 34%. Notably, before re-classifying her unclassifiable participants (62%) into either Facilitator or Regulator classification on the basis of responses to the P6-9MQ using a statistical model of best fit, Sharp also found 34% of her socio-demographically representative sample for the U.K., were Facilitators. There may be methodological and social and/or cultural reasons for this variability in Facilitator classification. In the case of the first, maternal orientation may not have been accurately measured in the current or previous studies. For example, in the current study classification was made on the basis of responses to two of the 24 Facilitator/Regulator items of the P6-9MQ rather than a
cluster of expectations and preferences, because no such cluster of items differentiating
classification was evident to use in a model of best fit. Further, as this instrument samples
little of the meta-representational level data which might help to reliably discriminate
orientation classifications and no other qualitative data such as observational data were
collected, the validity of the classifications could not be corroborated.

In the case of the second point, though Scher and Blumberg (1992) found no link
between ethnicity and distribution of classifications in their Israeli sample, the small size
and socio-demographic bias of the sample may have obscured positive associations.
Consistent with this hypothesis Sharp (1995) found an association between classification
and ethnicity, socio-economic status and level of education in her socio-demographically
representative sample from the U.K. There was an overrepresentation of Asian-born and
Indian-born women, women of lower socio-economic status and lower levels of
education in the Regulator classification group. Because Sharp took care to employ a
large, socio-demographically representative sample her positive results are likely to be
more reliable than those of Scher and Blumberg. Extending the positive findings of Sharp
regarding the socio-demographic profile of the Regulator orientation, it follows that there
might be many reasons why Anglo-Saxon or Anglo-Celtic, middle-class, well-educated
women would be more influenced by the 'breast is best' doctrine which has become
fashionable in western society during the past 10 to 15 years and presumably, would be
more able to follow fashions of this type by virtue of their relatively privileged social
status. These women then, would conceivably be more likely to intend feeding by
demand (breast) rather than by schedule (bottle), and to show their intentions about
childrearing associated with the Facilitator orientation. Interestingly, estimates of the
distribution of the Facilitator orientation in community-based, western, predominantly middle-class, Anglo-Saxon and Anglo-Celtic populations is similar to those of the Preoccupied adult attachment classification in similar populations, with which Raphael-Leff (Henry, personal communication, 1998) hypothesises it to be associated.

Only 6% of the sample in this study was classified into the (Collapsed) Regulator group. Participants were ascribed to this group on the basis of endorsing both items 4a and 4b of the P6-9MQ in a Regulator-type manner (0-2), or one item in this manner and the other in an Unknown manner (3). Because of the similarity between a response of 3 and one of 0, 1 or 2 to an item, collapsing these classifications was again expected to dilute but not seriously confound the (Collapsed) Regulator classification group. As such it seemed valid to compare the (Collapsed) Regulator classification group of this study with Regulator classification groups derived from other studies.

The proportion of women in the (Collapsed) Regulator classification group obtained in this study was markedly smaller than was obtained in the convenience, predominantly white, middle-class, well-educated U.K. sample of Raphael-Leff (1985a), in which 16/27 were classified Regulators. It was also smaller, though less so, than the 34% obtained by Scher and Blumberg (1992) in the Israeli, community-based sample and the 34% initially obtained by Sharp (1995) in her socio-demographically representative sample for the U.K.

It also interesting that the proportion of women classified into the (Collapsed) Regulator orientation group in this study differed most with the proportion classified as Regulators in the sample composed of western, middle-class, Anglo-Saxon and Anglo-Celtic women (Raphael-Leff, 1985). When samples have been more ethnically diverse,
such as the Israeli sample of Scher and Blumberg (1992) or the socio-demographically representative sample for the U.K. of Sharp (1995), there has been less proportional difference between group sizes. Though Scher and Blumberg (1992) found no association between ethnicity and maternal orientation classification, their sample was socio-demographically biased toward women of Asian-African descent and unlikely to be as reliable as that of Sharp (1995). Sharp (1995) found an overrepresentation of Asian-born and Indian-born women, and women of lower socio-economic and educational levels in her Regulator classification group. Consistent with this finding, there was an underrepresentation of Asian-born women in the sample of this study. This provides further indirect support for the proposed association between cultural variables such as ethnicity and the distribution of maternal orientation classifications.

The other large classification group in this study was the (Mixed) Facilitator/Regulator group (40%). Participants were ascribed to this group on the basis of endorsing one of items 4a and 4b on the P6-9MQ in a Facilitator-type manner (4-6) and the other in a Regulator-type manner (0-2). The only other study which discriminated women responding this way into separate classifications was made by Scher and Blumberg (1992). These investigators found that their ‘Bipolar’ classification constituted 17% of their Israeli, community-based sample, which was less than half that obtained here.

Given the large proportion of participants classified into the (Mixed) Facilitator/Regulator group here complements the small proportion of participants classified into the (Collapsed) Regulator classification group, it seems unlikely to be an anomaly of measurement. The disparity between the proportion of mixed groups obtained
here and in the Scher and Blumberg (1992) study may be a reflection of socio-demographic differences in the samples; however, because the meaning of this classification group in terms of the revised theory is not clear, it is difficult to hypothesise effects. The (large) size of the group obtained here is larger than might be expected of Raphael-Leff’s (personal communication, 1999) ‘conflicted group’, being more consistent with Sharp’s (personal communication, 1997) hypothesis that this group represents the Reciprocator orientation, who characteristically remain in touch with the baby and themselves, and take a flexible approach according to the level of need. Consistency with Sharp’s hypothesis is further supported by the fact that the size of this group is similar to that of the Autonomous adult attachment classification in similar samples, as would be expected if the two are associated as Raphael-Leff suggests (Henry, personal communication, 1998).

However, because the instrument used sampled little meta-representational data and no qualitative data were collected in this study to elaborate the reasons underlying participants’ responses, it is possible that this classification incorporates both women who could be characterised as ‘conflicted’ and those who could be characterised as Reciprocators.

Finally, some comment is needed about the (Pure) Unknown classification group obtained here, which constituted 5% of the sample. Participants were ascribed to this group on the basis of endorsing the midpoint (3) on both 4a and 4b of the P6-9MQ. The only published study which discriminated women responding in this way, termed ‘Intermediates’, was by Scher and Blumberg (1992). In this community-based, Israeli sample this classification group constituted 15% of the sample. The difference between
the estimate obtained here and in the Scher and Blumberg (1992) study could be attributable to a range of methodological and socio-cultural factors, and requires more investigation including the collection of qualitative data to help clarify the meaning of this response pattern.

Overall, results of the current and previous studies could be interpreted as implying that the constellation of anxieties, defenses and behaviors associated with the Facilitator orientation are prominent in the transition for large proportions of women in western, middle-class, well-educated, predominantly Anglo-Saxon and Anglo-Celtic populations and those of the Regulator orientation are becoming less prominent in these populations because of interactions between social and cultural variables, which may override individual preferences at times. It is possible, however, that the proportions of women conforming to a Regulator approach have not changed, but that Regulator-type preferences are being expressed more clearly along other dimensions not measured here. It also appears that the constellation of anxieties, defences and behaviors which reflect a combination of Facilitator and Regulator responses is becoming more prevalent in western, predominantly middle-class, Anglo-Saxon and Anglo-Celtic populations, and this may be changing relative to the reduction in prevalence of the Regulator orientation.

In this study it is unclear whether this latter group more closely resembles the Reciprocator orientation or the 'conflicted' group because of a lack of discriminating data.

These hypotheses are offered tentatively, given the limited basis for classification of maternal orientation, namely expectations and preferences regarding feeding, which, may be subject to fashion and other socio-cultural influences.
9.2.3 Content and concurrent validity of classifications

To examine the content validity of the classifications obtained here, the frequencies of type of responses to Facilitator/Regulator items on the P6-9MQ by the (Collapsed) Facilitator and (Mixed) Facilitator/Regulator mothers were calculated. Calculations were made for these classification groups only because the size of the (Collapsed) Regulator and (Pure) Unknown mothers precluded this type of analysis. Concurrent validity was analysed by comparing the distribution of classifications derived from the P6-9MQ with those derived from the PCE-1.

There was some evidence of content but not of concurrent validity. Data pertaining to content validity will be discussed first, followed by those pertaining to construct validity.

The (Collapsed) Facilitator mothers endorsed Facilitator-type anchor more often than Regulator-type anchor on 85% of the 24 Facilitator/Regulator items and endorsed Regulator-type anchor more than Facilitator-type anchor on the remainder. Consistent with the theory, the profile indicated that (Collapsed) Facilitator mothers expected or preferred that the labour would be exciting, that they would be walking about, that they would be with partner/mother/friend, that they would behave like their usual selves, and that the labour would be started by the baby. They expected or preferred that during the birth their bodies would know what to do, they were looking forward to it, they preferred it to be natural, believed it would be a personal event, believed that it would be pleasurable and that they would give birth by themselves. They expected or preferred that the baby would fit into their lives easily, would be someone they already knew, would be needy and helpless and would know who they were. Finally, they expected or preferred
that they, in early motherhood, would be mostly mothers, that they would adapt to the baby, would feel fulfilled, would feel changed by motherhood, and would enjoy the new way of life. Unexpectedly and in contrast to the theory, (Collapsed) Facilitator mothers in this study expected or preferred the labour to be controlled by the midwife/doctor, that they would be monitored, and that they would know what was best for the baby once he or she was born. The reasons for these latter inconsistencies could be various, including the possibility that some mothers had been inaccurately classified into this group, natural variation around a preferred approach or measurement error. The absence of a reliable independent criterion measure such as qualitative data or clinician assessment in this study, precluded the drawing of conclusions regarding the meaning of these inconsistencies.

The (Mixed) Facilitator/Regulator group endorsed the Facilitator-type anchor more often than the Regulator-type anchor on 67% of the 24 Facilitator/Regulator items and the Regulator-type anchor more often than the Facilitator-type anchor on all the remainder except one. The profile derived was of this group expecting or preferring that the labour would be exciting, would be controlled by them, that they would be walking around, that they would be monitored, would be left with a partner/mother/friend, would behave like their usual selves and that the labour would be started by their own bodies. They expected or preferred that during the birth their bodies would know what to do, they were looking forward to it, hoped that it would be natural, that it would be a personal event and that it would be painful. They showed no clear expectation or preference regarding whether they gave birth themselves or were delivered by the midwife. They expected or preferred that the baby would initially take over everything, would be
someone they already knew, would be needy and helpless, would be able to tell who they were, and would be born knowing what was best for him or her. Finally, they expected or preferred that in early motherhood they would be mostly mothers, would establish the baby in a routine, would feel fulfilled, would feel changed by motherhood and would enjoy the new way of life.

The profile of the (Collapsed) Facilitator group in particular, is consistent with the findings of Raphael-Leff (1983; 1985) and Sharp (1995): that there are identifiable maternal orientations, characterised by a characteristic and systematised set of ante-natal expectations and preferences regarding labour, birth, the infant and self in early motherhood. Interestingly, the types of responses endorsed by the (Collapsed) Facilitator mothers were also congruent with descriptions of the Preoccupied adult attachment classification, in which high levels of involvement with the other and a loss of emotional distance feature for example, providing some support for some association between maternal orientation and adult attachment classification as proposed by Raphael-Leff (Henry, personal communication, 1998). The consistency of these profiles also supports Sharp’s (1995) finding that the P6-9MQ had fair content validity.

The profile of the (Mixed) Facilitator/Regulator group was more difficult to interpret in terms of the theory, because it was unclear whether this pattern of responding corresponded to the Reciprocator orientation as proposed by Sharp (personal communication, 1997), the ‘conflicted’ group proposed by Raphael-Leff (personal communication, 1999) or a combination of both. However, the somewhat inconsistent pattern of expectations or preferences these mothers showed, namely ascribing control over the labour and birth to themselves, ascribing control to the baby after the birth and
then control to themselves in early motherhood through the establishment of a routine, was reminiscent of Raphael-Leff's (personal communication, 1999) of the 'conflicted' group. Again, the absence of reliable independent criterion data in this study, precluded the drawing of definitive conclusions.

The distribution of the PCE-1 and correlations between classifications derived from it and the P6-9MQ were examined, in order to make some preliminary investigation of the concurrent validity of the P6-9MQ. Because there was relatively little information regarding the psychometric properties of the PCE-1, it was used here for this purpose only. As a normal distribution was obtained from the PCE-1, and no association was found between classifications derived from the two instruments, there was no evidence of concurrent validity of the P6-9MQ. However, the implications of this result are limited for a number of reasons. Despite the fact that the PCE-1 was developed for this study by Raphael-Leff (1997), this instrument may not have been a valid measure of maternal orientation. The fact that the PCE-1 was a self report instrument, which could be expected to be less robust than another criterion such as an independent clinician’s assessment, that it included only three items and that classifications were derived from endorsement of one item only, may have reduced the reliability and validity of measurement. In addition, because four classifications were obtained from the P6-9MQ and three from the PCE-1, the distributions derived from the two instruments may not have been readily comparable. Finally, small group sizes in this analysis again, would have reduced power, making it possible that an existing relationship between the instruments was not detected.
Overall, the P6-9MQ in this study showed fair content validity but not concurrent validity, though the latter result may be attributable to methodological and statistical problems comparing data from the two instruments employed.

9.2.4 Discrimination of classifications

The distributions of responses to the 24 Facilitator/Regulator items by the (Collapsed) Facilitator and (Mixed) Facilitator/Regulator groups were statistically analysed to ascertain whether they discriminated the 'a priori' groups. These analyses did not support Hypothesis 2, that the maternal orientations women are classified into can be discriminated on the basis of systematically different ante-natal expectations and preferences regarding labour, birth, the infant and self in early motherhood as measured by the P6-9MQ, according to predictions derived from the revised model of Raphael-Leff (1993).

The distribution of responses to the 24 Facilitator/Regulator items on the P6-9MQ were not significant, except on one item regarding whether the baby would be established in a routine. The (Collapsed) Facilitator classification group expected or preferred to adapt to the baby around twice as often as they expected to establish the baby in a routine, but the (Mixed) Facilitator/Regulator groups expected to establish the baby in a routine almost three times as often as they expected to adapt to the baby. The (Collapsed) Facilitator trend here is consistent with the theory and results of Raphael-Leff (1983; 1985; 1993) and of Sharp (1995) which suggests that preference regarding the establishment of a routine for the baby is among the strongest predictors of orientation type.
The lack of discrimination of maternal orientation classifications and of discriminant validity in the P6-9MQ is in contrast to the results of Sharp (1995), who found that her re-classified and collapsed Facilitator and Regulator groups differed significantly in the distribution of responses to 13 of the 24 Facilitator/Regulator items of the P6-9MQ. It seems possible that there are methodological and statistical reasons for the comparatively poor discrimination of the groups in this study.

Firstly, the P6-9MQ may not be well suited to the discrimination of maternal orientation for a number of reasons. It was designed with the two-factor model in mind as reflected in the use of Likert scales for responses. Though this instrument samples representational level phenomena it elicits little of the data which Raphael-Leff (personal communication, 1999) suggests would help to discriminate classifications, such as the quality of the mother’s emotional connection with her infant. For example, a Reciprocator could be expected to consistently show empathy with her infant but a ‘conflicted’ mother would show alternations between overidentification (like a Facilitator) and underidentification (like a Regulator). Data of these sort, some of which are at the meta-representational level, would help to clarify whether the (Mixed) Facilitator/Regulator mothers’ expectations of imposing a routine on the baby, despite believing the baby would know best, reflected the unresolved conflict around competing approaches characteristic of the ‘conflicted’ group (Raphael-Leff, personal communication, 1999).

Secondly, the absence of a Regulator group in the classifications yielded in this sample may have impacted the quality of the discrimination between classification groups, because the extreme opposite of the Facilitator group was not represented.
Thirdly, the relatively small sizes of the groups in this study would have diminished the power of the statistical analyses, as evidenced by the use of Fishers Exact and Phi adjustments because of small cell sizes in the crosstabulation tables. This may have obscured effects which may have been evident in comparisons of larger groups.

Overall, the P6-9MQ did not show good discriminant validity in this study. This may be attributable to the measurement base of the instrument, particularly its derivation from the original two-factor model and bias toward sampling representational rather than meta-representational level content; but also to the absence of a Regulator group in the classification yield and to the reduced power of the statistical analyses due to small sized groups employed here.

9.3 Minor psychiatric morbidity

9.3.1 Prevalence of minor psychiatric symptomatology

An estimated 29% of the sample reported minor psychiatric symptomatology above the clinical cutoff of 7, on the GHQ-28. This prevalence rate was slightly elevated above the most comparable rate derived by Sharp (1995) using the same instrument, clinical cutoff and time-frame of measurement, of 21.1%. It was relatively consistent with the findings of Nott and Cutts (1982) and Kitamura et al (1994) using an unmodified version of the GHQ in the early post-partum. The slight disparity between the rate obtained here and in the Sharp (1995) study may be associated with social and/or cultural variables which have been prominent influences throughout this study.

The sample employed in this study had an underrepresentation of older and of Asian-born women in it and subsequent participant attrition compounded the ethnicity
bias in terms of women born outside Australia. Though most studies of age as a socio-demographic variable associated with diminished post-partum wellbeing have obtained null results (Astbury et al, 1994; Gotlib et al, 1989; O'Hara et al, 1991; O'Hara et al, 1996; Warner et al, 1996), at least one study found age to have some predictive power (Webster et al, 1994). It may be that this variable became important here because of an interaction with other socio-demographic variables such as ethnicity. Hence, the higher proportion of young mothers in this sample would be consistent with marginally higher reported rates of distress. The overrepresentation of Australia-born participants may also be important because these participants could be expected to be more familiar with western research paradigms than non-Australian-born participants, and because this may in turn have compounded the trend toward marginally higher reporting of distress.

Assuming these effects account for the slight disparity, the prevalence rate obtained here supports the findings of others that the GHQ-28 is sensitive to post-partum distress.

The prevalence rate obtained here was at the lower end of estimates based upon non-specific standardised or unstandardised instruments such as those of Breen (1975) and Leifer (1980). These investigators estimated that between 30-50% of community-based populations experience significant somatic and depressive symptomatology in the early post-partum. This also supports the findings of a meta analysis suggesting that the degree of structure and standardisation of the instrument is associated with the rates of distress reported (O'Hara & Swain, 1996).

The relatively high prevalence rates of post-partum distress noted suggests that symptoms of a somatic, anxiety-based, social-dysfunctional and depressive nature are relatively common among early post-partum populations. As others have suggested
(Kumar, 1994; Murray, 1992) it would appear that by taking an inclusive approach to the measurement of post-partum distress, the range of responses and inner experiences which these may reflect can receive the acknowledgement and assistance deserved. Additionally, taking an inclusive approach would enable early detection and accurate assessment of emerging psychopathology. This proposition is consistent with the suggestion of other investigators that it is important to differentiate normal from pathological syndromes in the post-partum in order not to misclassify normal transitional processes as clinical syndromes (Condon & Corkindale, 1997; Kitamura et al, 1994; Whiffen, 1990). This issue is discussed further in sections 9.4 and 9.5 regarding the EPNDS and MDCL-MDE data.

9.3.2 Comparison of GHQ-28 clinical and non-clinical groups on socio-demographic variables

In view of the prominence of social and/or cultural variables in other areas of this study, it seemed important to establish socio-demographic profiles of the clinical and non-clinical groups derived from the GHQ-28 to ascertain whether any of these should be considered as control variables. The groups did not differ along any of the socio-demographic variables measured in this study.

Though it is difficult to make specific cross-study comparisons because most investigators have examined the relationship between socio-demographics and EPNDS scores rather than GHQ-28 scores, general contrasts in terms of clinical status may be relevant. These non-significant results are broadly consistent with the findings of a number of studies that there is little association between socio-demographic variables and
maternal post-partum clinical status including variables of parity and education (Astbury et al, 1994), age (Astbury et al, 1994; Gotlib et al, 1989; O’Hara et al, 1991), employment status and marital status (O’Hara et al, 1991). However, results obtained here are at odds with the finding of Warner et al (1996) that planning of pregnancy was associated with clinical symptomatology in the post-partum. Given that the positive findings of Warner et al were contrary to most other studies, it seems likely that they were anomalies associated with the sample and methodology of the study.

9.3.3 Comparison of the GHQ-28 clinical and non-clinical groups on responses to P6-9MQ items

The distribution of the clinical and non-clinical groups’ responses to the 24 Facilitator/Regulator items of the P6-9MQ were compared to ascertain whether any specific ante-natal expectations or preferences were associated with subsequent clinical status. Results did not support Hypothesis 3, that features of women’s ante-natal expectations and preferences regarding motherhood as measured by the P6-9MQ, would be associated with maternal post-partum minor psychiatric symptomatology at six weeks in line with the revised maternal orientation model of Raphael-Leff (1993).

This result was contrary to the work of other investigators regarding the predictive power of ante-natal subjective experience such as representations of self and particularly, of self-as-parent (Ballou, 1976; Breen, 1975; Leifer, 1980; Slade & Cohn, 1996; Wolk et al, 1992; Zeanah et al, 1985), of anxieties and conflicts (Ballou, 1976) and of maternal orientation (Sharp, 1995) upon post-natal distress levels. It seems likely that the impact of methodological problems with both instruments might be relevant here. The limited way
in which the P6-9MQ samples ante-natal maternal representations and particularly meta-representations of motherhood means that data of potential predictive value, are not well sampled. This would weaken the predictive power of the instrument. This hypothesis is consistent with the fact that in most studies which have obtained positive predictive results, the instruments used to measure maternal subjective experiences and states of mind ante-natally have elicited more detailed data through semi-structured interview (Ballou, 1976; Breen, 1975; Fonagy et al, 1991; Fonagy et al, 1994; George et al, 1985; Wolk et al, 1992; Zeanah et al, 1985) or projective tests (Ballou, 1976; Breen, 1975), often of a meta-representational sort. As already noted, the GHQ-28 appears to confound distress of a normal-transitional and pathological type when used with post-partum populations. Hence, the criterion measure would also be weakened. Both points reinforce the need to develop ways of measuring maternal orientation which sample in detail, all levels at which the construct operates.

Overall, results of this and other studies indicate that minor psychiatric symptomatology is common among post-partum populations, though may be reported less frequently in populations unfamiliar with western, middle-class research paradigms. This symptomatology is likely to reflect a range of experience from normal-transitional to pathological. Taking an inclusive approach to all signs of distress enables prompt acknowledgment, support and further assessment to avoid overestimations of clinical status and encourage early intervention when these occur. The GHQ-28 appears to be one tool useful to measure such distress but does not discriminate severity. Results of this study did not support the hypothesis that maternal ante-natal expectations regarding pregnancy, birth, the infant and self in early motherhood would be associated with minor
psychiatric symptomatology in the post-partum. This result may be confounded by methodological problems associated with the P6-9MQ and GHQ-28. These may be overcome through the use of instruments and methods of assessment more sensitive to potentially predictive maternal representational and particularly meta-representational phenomena, such as projective instruments (Ballou, 1976; Breen, 1975) or semi-structured interview leading to analysis of discourse (Levine et al, 1991; Main et al, 1985). Outcome measures should also measure pathological experiences rather than confound normal-transitional and pathological experiences.

9.4 Minor depressive morbidity

9.4.1 Prevalence of minor depressive symptomatology

An estimated 10% of the sample reported clinically significant depressive symptomatology on the EPNDS when a clinical cutoff of 12 was used. This prevalence rate was consistent with the most comparable rates derived from the same instrument, administered around the same time with a clinical cutoff of 12 or 13, including the 10.4% found by Sharp (1995) in her community-based, primiparous U.K. sample; the 14% found by Greene et al (1991) in their community-based sample; the 9% found by Stamp and Growther (1993) in an Australian community-based sample and the 7.8% found by Webster et al (1994) in an at-risk N.Z. sample.

It was also consistent with estimates derived from the same instrument but with a slightly lower cutoff of 10/11 including the 12.6% found by Carothers and Murray (1990) in their community-based, primiparous sample from the U.K. and the 11.8% found by Warner et al (1996) in another community-based primiparous sample.
Finally, it was consistent with the prevalence rate of minor depressive symptomatology derived from self-report methods, estimated in the meta-analysis of 59 independent studies by O'Hara and Swain (1996).

The fact that the prevalence rate of minor depressive symptomatology derived from the EPNDS varies from the estimate of minor psychiatric symptomatology derived from this study is consistent with the hypothesis offered earlier that the GHQ-28 measures distress, which is a confound of normal-transitional and pathological symptomatology. A number of investigators recommend the use of instruments specifically designed for post-partum populations, to reduce the misclassification of normal-transitional from pathological distress (Condon & Corkindale, 1997; Kitamura, Shima, Sugawara & Toda, 1994; Whiffen, 1990). Though one investigator obtained a strong correlation between the GHQ-28 and EPNDS (Boyce et al, 1993) this result was likely to be an anomaly related to the overestimation of prevalence derived from a sampling bias toward clinical populations.

9.4.2 Comparison of EPNDS clinical and non-clinical groups on socio-demographic variables

Socio-demographic profiles of the clinical and non-clinical groups derived from the EPNDS were also developed to ascertain whether any of these variables should be considered as control variables.

As in the case of minor psychiatric symptomatology, the clinical and non-clinical groups were compared in their distributions of responses along each socio-demographic variable. The clinical and non-clinical groups did not differ on any socio-demographic
variable excepting pregnancy complications, with the clinical group reporting complications around four times as often as no complications, and the non-clinical group reporting no complications more often than complications. This finding was in contrast to other studies using clinical status on the EPNDS such as the study by Warner et al (1996) which found no such association and with general null results regarding other socio-demographic variables such as parity and education (Astbury et al, 1994; Gotlib et al, 1989; O’Hara et al, 1984); occupational status (Gotlib et al, 1989); age (Astbury et al, 1994; Gotlib et al, 1989; O’Hara et al, 1991); employment status and marital status (O’Hara et al, 1991). Despite the fact that this was the only positive finding, and that there was little support for it in the literature, the plausibility and magnitude of the effect made it difficult to dismiss as a anomaly.

9.4.3 Comparison of EPNDS clinical and non-clinical groups on responses to P6-9MQ items

The clinical and non-clinical groups’ patterns of responding to the 24 Facilitator/Regulator items on the P6-9MQ were compared to ascertain whether any specific ante-natal expectations or preferences were associated with subsequent clinical status. Results did not support Hypothesis 4, that features of women’s ante-natal expectations and preferences regarding motherhood as measured by the P6-9MQ, would be associated with minor depressive symptomatology at six weeks post-partum, in line with the revised maternal orientation model of Raphael-Leff (1993). The groups’ distributions of responses differed significantly on only one item regarding whom they would be left with during the labour, with the clinical group expecting to be left with
partner/mother/friend around as often as they expected to be left with midwives/doctors, and women in the non-clinical group almost exclusively expecting to be left with mother/partner/friend. In the absence of any other significant associations between the P6-9MQ items and EPNDS score in this study suggestive of a meaningful effect, or of an explanation of this single association in terms of the revised model, this result was difficult to interpret.

Again, the result was not consistent with the findings of other investigators regarding the predictive power of ante-natal subjective experience such as representations of self and self-as-parent (Ballou, 1976; Breen, 1975; Leifer, 1980; Wolk et al, 1992; Slade & Cohn, 1996; Zeanah et al, 1985), of anxieties and conflicts (Ballou, 1976) and of maternal orientation (Sharp, 1995) upon post-partum distress levels. As was discussed with the GHQ-28, it is likely that the limitations of measurement of maternal orientation in this study may account for the null results.

Overall, results of this and previous studies indicate that minor depressive symptomatology is experienced by a significant minority of women in the post-partum and that the EPNDS is a useful measure of this. Results of this study did not support an association between maternal ante-natal expectations and preferences regarding labour, the birth, the infant and self in early motherhood and minor depressive symptomatology in the post-partum. This null result is likely to be confounded by methodological problems associated with the measurement of maternal orientation and reinforces the value of using instruments and methods which measure potentially predictive maternal representational and meta-representational phenomena.
9.5 Depression diagnosis

9.5.1 Prevalence of Major Depressive Episode

Munich Diagnostic Check List - Major Depressive Episode (MDCL-MDE) data were available for only 4/7 of the women who scored above the clinical cutoff on the EPNDS and thus who were eligible for diagnostic assessment. Two of these were diagnosed with a Major Depressive Episode. On the basis of these data 3% of the TS were estimated to have a Major Depressive Episode as defined by the DSM-IIIR. This rate is somewhat lower than estimates derived from other studies in which standardised diagnostic interview methods have been used including the 6.8% for depression against the SADS by Gotlib et al (1989); 7% for depression against interview methods using the RDC by Campbell et al (1992); 12% for depression against the SADS and RDC by O'Hara (1986); 10.4% for depression against the SCL-90-R by O'Hara et al (1990) and the 12% derived from the meta-analysis of 59 independent studies by O'Hara and Swain (1996). It seems likely that these disparities are attributable to methodological problems in the current and previous studies.

The small sample size, restriction of diagnostic assessment to only those women who scored above the clinical cutoff on the EPNDS, and the use of an instrument which may have allowed more measurement error to occur than standardised diagnostic instruments, are likely to have led to an underestimation of Major Depressive Episode in the current study. Additionally, the instrument was scored on the basis of self-report and observational data only, and the absence of historical data may have contributed to an underestimation. It should also be remembered that some of the prevalence rates cited previously are inaccurate because they confound minor and major depression and thus
overestimate the prevalence of major depression. For example, in the study of O’Hara (1986) only 8% of the 12% prevalence rate cited, represents diagnosis of major depression.

The large disparity between the prevalence rates of Major Depressive Episode measured by the MDCL and minor psychiatric morbidity measured by the GHQ-28 in this study, is consistent with the methodological and conceptual issues already described. Aside from the fact that the MDCL-MDE may underestimate major depression because of its design, the two instruments measure constructs with little shared content. The GHQ-28 measures normal-transitional and minor distress while the MDCL-MDE measures only gross, pathological forms of depression. There is little basis for comparing estimates of prevalence derived from these instruments.

This account is consistent with the finding of a smaller disparity between estimates of Major Depressive Episode, measured by the MDCL-MDE and minor depressive symptomatology measured by the EPNDS. These instruments have greater conceptual overlap as shown by studies of the association between EPNDS scores and diagnostic criteria (Cox et al, 1987; Harris et al, 1989) which have yielded an estimated positive predictive value for the EPNDS against RDC of 73%. Other studies have found an association between the EPNDS and standardised diagnostic interview (Boyce et al, 1993; Carothers & Murray, 1990; Cox et al, 1987), leading to estimates of the positive predictive value for major depression against SPI of 66.7% and against DIS of 69.2%. This result reinforces the value of taking an inclusive approach to measuring maternal post-partum distress rather than focusing exclusively upon extreme manifestations of
psychopathology as the only syndromes which warrant attention (Kumar, 1994; Murray, 1992).

9.5.2 Comparison of MDCL-MDE diagnosed and non-diagnosed groups on frequency of responses to the P6-9MQ

Because of the small size of the diagnosed and non-diagnosed groups the distributions of responses to the 24 Facilitator/Regulator items on the P6-9MQ could not be statistically analysed. This precluded either acceptance or rejection of the null hypothesis in the case of Hypothesis 5, that features of women’s ante-natal expectations and preferences regarding motherhood as measured by the P6-9MQ, would be associated with maternal major depression at eight weeks post-partum in line with predictions from the revised maternal orientation model of Raphael-Leff (1993). However, the frequencies with which the diagnosed and non-diagnosed participants endorsed Facilitator-type, Regulator-type and midpoint responses were calculated.

There appeared to be trends in the data such that participants diagnosed with a Major Depressive Episode showed a predominance of Facilitator-type and Regulator-type responses and participants not diagnosed showed more even endorsement of Facilitator-type, midpoint and Regulator-type responses. These patterns were consistent with Raphael-Leff’s (1982; 1985; 1993, personal communication, 1999) and Sharp’s (personal communication, 1997) proposition that more rigid and polarised approaches to the transition might place women at higher risk of poor outcomes than more flexible and moderated approaches. They are consistent with similar findings by other investigators including Breen (1975) and Leifer (1980). Because these trends in the data were subtle,
derived from small sized groups and unable to be tested statistically, they did not provide sufficient evidence to test the null hypothesis.

Overall, there is considerable evidence across studies that diagnoses of major depression are less common in post-partum populations than either minor psychiatric symptomatology or minor depressive symptomatology, and represent only the most extreme examples of psychopathology. The most reliable assessment of these diagnostic syndromes may come from standardised diagnostic interviews. Results of this study were insufficient to enable acceptance or rejection of the null hypothesis about whether maternal ante-natal expectations and preferences regarding the labour, birth, the infant and self in early motherhood were associated with depression diagnosis. This null result is likely to be confounded by methodological problems associated with the measurement of maternal orientation in this study, the MDCL-MDE and the small sizes of the groups at this stage of data collection.

9.6 Infant-mother synchrony

9.6.1 Prevalence of low infant-mother synchrony

Dyadic Mutuality Code data were available for only 10 infant-mother dyads. An estimated 10% of the TS scored in the low synchrony range, 20% scored in the moderate range and 70% scored in the high synchrony range. As distribution data have been published from only one study (Censullo, 1987), were derived from small, specific infant populations (pre-term and full-term infants) and were based upon a marginally different cutoff for low synchrony (9 or less) at three months post-partum, comparisons of distribution are difficult to make. The prevalence rate of low synchrony obtained here is
roughly comparable to the prevalence rate obtained for the full-term infants by Censullo et al (1987) of 17%. The disparity between the two rates could easily be attributed to underestimation in the current study because of the small sized group from which the estimate was derived, an overestimation in the Censullo et al (1987) study because pre-term and full-term infants were confounded and because of slight differences in the cutoff points and time of measurement.

This result emphasises the importance of recruiting sufficiently sized samples which are either homogenous along potentially confounding socio-demographic variables such as gestation, or are large enough to enable variables such as these to be used as controls, leading to more reliable estimates of prevalence. Further work with cross-cultural or socio-demographically diverse samples would be valuable to help identify any social and/or culture-specific variations which interact with or override individual differences in quality of synchrony.

9.6.2 Comparison of DMC low, medium and high synchrony groups on frequency of responses to the P6-9MQ

As in the case of depression diagnosis the small size of the low, medium and high synchrony groups' distributions of responses to the 24 Facilitator/Regulator items on the P6-9MQ could not be statistically analysed, precluding answering Exploratory Question 1. Instead, the frequencies with which each group endorsed the Facilitator-type, Regulator-type and midpoint responses were calculated to examine trends in responses by the groups.
Examination of the distributions did not reveal any clear patterns. Overall, results of this study were insufficient to enable the exploratory question to be answered. This null result is likely to be confounded by methodological problems associated with the measurement of maternal orientation and the small size of the groups at this stage of data collection. This result again, attests to the value of using instruments and methods of measurement which measure potentially predictive maternal representational and meta-representational phenomena and of recruiting sufficiently sized samples to enable detection of effects. This may be particularly so in populations of new mothers, for whom time and childcare constraints may pose obstacles to providing this type of laboratory data. For this reason it may be worthwhile to consider other forms of data collection, such as home based video-taping.
CHAPTER 10 RECOMMENDATIONS

The mixed results obtained in this study regarding the revised maternal orientation model carry a number of conceptual, methodological and clinical implications which require comment. These will be commented upon in turn.

At a conceptual level, though the construct of maternal orientation was originally conceived as predominantly attributable to the internal dynamics of the individual, other variables such as fashion and culture-specific childrearing practices appear to powerfully influence the way these dynamics manifest and are expressed. Further study of the relative influence of these variables over the expression of individual expectations and preferences in the transition to maternity, is needed.

Secondly, important conceptual links between maternal orientation and theoretically-related constructs which have a strong empirical base, such as adult and infant attachment, require further investigation. Work of this sort would have twofold value, in testing hypotheses regarding conceptual links, and in elucidating some empirical dimensions of these constructs such as relative distributions of classifications and psychometric properties of the measurement methods employed.

At an empirical level, methods of measuring maternal orientation, particularly according to the revised model, require review and further development. Approaches developed could better serve the psychodynamic conceptual-base of the model if they were to sample all content areas of maternal orientation including meta-representational experiences, which may be valuable discriminants of classification type. A semi-structured, interview-based instrument administered by a clinician, which produces
discourse able to be subjected to content or thematic analysis, is one example, although
the practical accessibility would thereby be more limited than that of existing
instruments.

Subsequent studies should attempt to utilise large, more socio-demographically
diverse samples than were able to be employed here. This would enable further study of
the social and cultural variables which appear to be powerful influences over the way in
which internal dynamics manifest in the approach a woman takes to the motherhood
transition. Efforts of this sort would also generate the quantity of data required for power
analyses, which in turn, would increase the likelihood of detecting effects when these are
present.

Further, outcome criteria in subsequent studies should be theoretically rather than
empirically derived, should be measured using approaches and instruments which are
relevant to post-partum populations and for which there are established psychometric data
available. These might include the EPNDS, structured diagnostic instruments for the
measurement of depression, the Strange Situation or Adult Attachment Interview. It
would also be important to take into account the constraints upon time and mobility faced
by new mothers and their infants, in planning the data collection.

At a clinical level, preventative and early intervention work with pregnant women
and new mothers could be promoted by incorporating concepts from the revised maternal
orientation model into ante-natal and post-natal assessment and care. To facilitate this
staff could be given opportunities for exposure to the model, and to trial ways of
integrating useful concepts into existing practices.
Finally, and to paraphrase Winnicott (1949), because mothers do not exist without infants it would be important for clinicians in ante-natal and post-natal care to regard their formulations of a mother’s maternal orientation as valuable clues to the needs and potentialities of the infant, and the infant-mother relationship, and to develop their interventions accordingly.
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Appendix A
Flow chart of sample and instruments used at each stage of data collection

Third trimester ante-natal stage

Six week post-natal stage

Eight week post-natal stage

Total sample (TS n=73) ——
* Cover letter
* Participant Information sheet
* Consent form
* Demographics
* P6-9MQ

Completer group (CG n=51) ——
* GHQ-28
* EPNDS
* MDCL-MDE

Infant-mother subset (IMS n=11) ——
* DMC
Appendix B
Covering letter for ante-natal package of instruments

Michelle Earle
Department of Adult Psych.

Dear,

I am a staff member at...................... who is based in the Ante-natal Clinic doing research into the affect of pregnancy and motherhood on women's thoughts and feelings. I am doing this to help health care workers in the area understand what it's like for women so we can provide better services and supports for them. I enclose copies of the following for your information,

* Information Sheet
* Consent Form
* Demographic Interview
* Pregnancy Questionnaire

All women in the late stages of pregnancy are being sent these forms and invited to be involved. Involvement is voluntary, and means filling out the enclosed forms before the baby is born, then filling out another 3-4 forms about 6 weeks after the baby is born. This will be all for most women involved. However a small number will be asked for 1 further contact with their babies at about 2 months after the baby is born. All the information you give will be anonymous and should not cause any inconvenience or worry. So far women involved have enjoyed it and been glad to share their ideas to help other women. The Information Sheet explains this in more detail.

If you would like to be involved please do the following,

* sign and have someone else witness (eg partner, neighbour, friend) the Consent Form
* answer question on the Demographic Interview
* answer all questions on the Pregnancy Questionnaire by reading the statement then ticking the box which most reflects your attitude

eg Do you imagine yourself?

NOT IN CONTROL

IN CONTROL

* read the 3 examples on the final page (Childbirth Examples) and tick the one which most reflects your approach
* keep the Information Sheet but return the other forms to me by putting them in the envelope and leaving it in the returns box at your next Ante-natal Clinic appointment or by putting a stamp on the envelope and posting it to me

I will follow-up all women involved about 6 weeks after the due date of the baby with the other forms

Please feel free to contact me at ......................if you have questions - I will be happy to speak with you.

Thank you for your help and best wishes for the remainder of the pregnancy and afterwards.

Yours sincerely,

Michelle Earle
Title of the Study: 'Toward a Conceptual Model of the Relationships Between Women’s Orientation to Mothering, Post-partum Mood and Infant-Mother Interaction'

Chief Investigator: Michelle Earle  
B.A. (Applied Psychology)  
Grad. Dip. (Applied Psychology)  
Registered Psychologist

Purpose of Study: Pregnancy and motherhood is a challenging time in a woman’s life. Women approach the process differently and it has differing affects on themselves and their babies. Reports show that becoming a mother can be anything from a satisfying to a difficult experience. Whatever the demands of motherhood, health care services can help a woman meet them. This study aims to inform health care providers about the needs of women who are becoming mothers. It will do this by looking at the way women approach motherhood, and the impact is has on themselves and their babies. Participants will be pregnant women attending out-patient clinics at ................., during ante-natal and post-natal stages.

Benefits to Participants: This study is not designed to bring specific benefits to participants. However, results will assist health care providers to meet the needs of pregnant women, new mothers and babies, through relevant ante and post-natal support.

Requirements of Participation: Participation will involve filling out 2 questionnaires about your age, marital status, occupation etc and attitudes toward pregnancy during the ante-natal period, taking 10-15 minutes. Participants will fill out 2 more questionnaires around 6 weeks post-natally, taking between 15 and 30 minutes. Some participants may be asked to provide further information. About 2 weeks later some participants will be asked to attend.................and allow a brief segment of play between themselves and their babies to be videotaped. This will be the extent involvement.

It is unlikely that this will cause any inconvenience or discomfort. If you have any questions you can contact the Chief Investigator or Research Supervisor (see over).
Appendix C continued.

Confidentiality: Only the Chief Investigator and co-investigators will see raw information gathered from participants. This information will be held in security for 5 years as specified by current ethical guidelines, then destroyed. All information will have codes rather than names attached to ensure anonymity, and in the case of videotaped material, identifiable markers in the setting will be removed prior to recording, to further protect anonymity. Information will be pooled and presented as group rather than individual data, and will be published in relevant journals at a later date. Information gathered during this study will not be entered in hospital files.

Freedom of Participation: Participants will take part in the study only after giving informed consent and will be free to withdraw consent at any time. The decision regarding whether to participate or not will in no way affect any service or treatment participants are receiving from the hospital.

Contacts: Michelle Earle  
Chief Investigator  
Psychologist  
Adult Psychiatry  
..........................  
..........................

Associate Professor Linda L. Viney  
Second Research Supervisor  
Department of Psychology  
University of Wollongong  
Northfields Ave Wollongong  
ph. 042 213 162

Complaints: Concerns regarding the study should be directed to,

Complaints Liaison Officer  
ph. 9550 2745
Appendix D
Participant Consent Form

I have been asked to participate in the research study entitled *Toward a Conceptual Model of the Relationship between a Women's Orientation to Mothering, Post-Partum Mood and Infant-Mother Interaction*, conducted by Michelle Earle.

I give my consent by signing this form on the understanding that the study will be carried out in a manner conforming to the principles set out by the National Health and Medical Research Council and that,

1. I understand the general purposes, methods, demands, benefits and possible risks, inconveniences and discomforts of the study as outlined in the 'Participant Information Sheet', which has been given to me.

2. My participation in this study will be voluntary and I am free to withdraw at any time.

3. Anonymity of information I provide is assured,

4. I may raise questions regarding the study with the Chief Investigator Michelle Earle or Linda L. Viney (see 'Participant Information Sheet for contact no's."

Signature..........................................................Date.........................

Witness I ..........................................................of..........................

I, as an independent witness, confirm that the aims and procedures of the study and any risks involved here have been explained to the person consenting, whose signature I witness. In my opinion she is acting rationally and voluntarily.

Signature..........................................................Date.........................

Investigator

I have explained the aims, risks and procedures of the above named study to the person named herein.

Signature..........................................................Date.........................
Appendix E
Socio-demographic Information Sheet

1. Name

2. Address

3. Date of birth

4. Country of birth

5. Level of education
   a) primary.......................... b) secondary .............. c) tertiary..........................

6. Occupation

7. Marital status
   a) married.......................... b) unmarried (divorced/defacto/other)..........................

8. Living arrangements
   a) living with partner.............. b) living without partner.............. c) other..............

9. Religion
   a) religion (denomination)......... b) no religion..........................

10. Due date of baby

11. Pregnancy
   a) planned .......................... b) unplanned..........................

12. Complications during pregnancy

Appendix F
Pregnancy 6-9 Months Questionnaire (P6-9MQ, Sharp, 1995)

The following questions form part of our study on women's experience of pregnancy. We ask women for their thoughts and feelings about the birth of their baby and what they expect it to be like. We are trying to learn from your answers, so please just SAY HOW YOU GENERALLY FEEL NOW. There are no right or wrong answers.

INSTRUCTIONS

FOR THE FOLLOWING SET OF QUESTIONS WE WOULD LIKE TO KNOW THE WAY YOU GENERALLY FEEL ABOUT PREGNANCY AND THE FUTURE BIRTH OF YOUR BABY. PLEASE MAKE A CLEAR TICK IN ONE OF THE BOXES TO TELL US HOW MUCH YOUR FEELINGS ARE NEARER TO THE WORDS ON THE LEFT, OR TO THE WORDS ON THE RIGHT.

PLEASE TRY TO DECIDE EITHER WAY—ONLY USE THE MIDDLE BOX IF YOUR FEELINGS ARE REALLY NO NEARER TO ONE END THAN THE OTHER.

EXAMPLE: If we asked you to tell us whether you were hoping more for a boy or more for a girl, you would put your tick in one of the boxes below as follows........

<table>
<thead>
<tr>
<th>BOY</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>GIRL</th>
</tr>
</thead>
</table>

For Office Use Only

| Record ID number | 3 | 0 |
| PATNUM           | ___ | ___ | ___ |
| Date             | ___ | ___ | ___ | ___ | ___ | 6-11 |
| Wks Preg         | ___ | ___ | 12-13 |

Note
NOT TO BE GIVEN TO OTHER CLINICIANS/ACADEMIC\N WITHOUT MY PERMISSION.

H. Sharp
Appendix F continued.

(1) IF YOU TRY AND IMAGINE YOUR LABOUR

(a) Does it seem...
MOSTLY EXCITING
MOSTLY EXHAUSTING

(b) Would you prefer it to be...
CONTROLLED BY THE MIDWIFE OR DOCTOR
CONTROLLED BY YOU

(c) Would you prefer to spend time...
MOSTLY LYING DOWN
MOSTLY WALKING ABOUT

(d) Would you prefer to spend time...
MOSTLY BEING MONITORED
MOSTLY NOT BEING MONITORED

(e) Would you rather...
MOSTLY BE LEFT WITH A PARTNER, MUM OR FRIEND
MOSTLY HAVE MIDWIVES OR DOCTORS WITH YOU

(f) Do you imagine you will...
BEHAVE LIKE YOUR USUAL SELF
SHOW ANOTHER SIDE OF YOURSELF

(g) Do you imagine yourself...
NOT IN CONTROL
IN CONTROL

(h) Do you imagine yourself...
RELAXED
TENSE

(i) I think of my labour as being...
MOSTLY STARTED BY MY BABY
MOSTLY STARTED BY MY OWN BODY
Appendix F continued.

(2) WHAT ARE YOUR FEELINGS ABOUT THE BIRTH?

(a) MY BODY WILL KNOW WHAT TO DO

(b) MOSTLY, I AM DREADING IT

(c) I would prefer the birth to be

HELPED A LOT BY MEDICAL EQUIPMENT

(d) Birth is mainly

A PERSONAL EVENT BETWEEN MOTHER AND BABY

(e) Giving birth is

MAINLY FULL OF PAIN

(f) Giving birth will most likely make you feel

FULFILLED

(g) Giving birth will most likely make you feel

PROUD

(h) Giving birth is likely to make you feel

VULNERABLE

(i) Do you imagine yourself

MOSTLY GIVING BIRTH TO THE BABY YOURSELF

MY BODY NEEDS TO BE TRAINED TO KNOW WHAT TO DO

MOSTLY, I AM LOOKING FORWARD TO IT

AS "NATURAL" AS POSSIBLE

A SPECIAL HOSPITAL EVENT

MAINLY FULL OF PLEASURE

DRAINED

EMBARRASSED

CONFIDENT

MOSTLY BEING DELIVERED BY THE MIDWIFE
Appendix F continued.

(j) **How sure are you about what you want to happen during your labour and the birth of your baby?**

| TOTALLY SURE ABOUT WHAT I WANT | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] | NOT AT ALL SURE ABOUT WHAT I WANT | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] |

(k) **To what extent do you think all your wishes about what happens will be fulfilled?**

| COMPLETELY | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] | NOT AT ALL | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] |

(3) **WHAT DO YOU IMAGINE THE BABY WILL BE LIKE AT FIRST?**

| FITTING EASILY INTO YOUR LIFE | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] | TAKING OVER EVERYTHING YOU DO | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] |
| MOSTLY A JOY | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] | MOSTLY A HANDFUL | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] |
| A STRANGER AT FIRST | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] | SOMEONE THAT YOU KNOW ALREADY | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] |
| EASY TO SATISFY | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] | DIFFICULT TO SATISFY | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] |
| MOSTLY DEMANDING | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] | MOSTLY NEEDY AND HELPLESS | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] |
| ABLE TO TELL WHO YOU ARE FROM EARLY ON | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] | UNABLE TO TELL YOU APART FROM OTHER PEOPLE EARLY ON | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] |
| BORN BEING ABLE TO COMMUNICATE WITH YOU | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] | BORN NEEDING HELP TO LEARN HOW TO COMMUNICATE | [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] ... [ ] |
Appendix F continued.

EXEMPLARY EASY TO STOP HIM/HER CRYING

EXTREMELY DIFFICULT TO STOP HIM/HER CRYING

BORN KNOWING WHAT IS BEST FOR HIM OR HER

AS THE MOTHER YOU KNOW WHAT'S BEST

(4) (a) TO BEGIN WITH, DO YOU INTEND TO

FEED THE BABY ON DEMAND

FEED AT SET TIMES

(4) (b) AFTER SEVERAL MONTHS, DO YOU INTEND TO

FEED THE BABY ON DEMAND

FEED AT SET TIMES

(4) (c) DO YOU INTEND TO:

MOSTLY BREAST FEED

MOSTLY BOTTLE FEED

(5) HOW DO YOU IMAGINE YOURSELF IN THE FIRST FEW WEEKS?

MOSTLY A MOTHER

MOSTLY THE SAME PERSON AS USUAL

(b) MOSTLY TRYING TO GET THE BABY TO ADAPT TO A ROUTINE

MOSTLY ADAPTING TO THE BABY

(c) MOSTLY FEELING FULFILLED

MOSTLY FEELING TRAPPED

(d) VERY MUCH CHANGED BY BECOMING A MOTHER

MOSTLY UNCHANGED

(e) MOSTLY WAITING FOR THINGS TO GET BACK TO NORMAL

MOSTLY ENJOYING THE NEW WAY OF LIFE

THANK YOU VERY MUCH FOR YOUR HELP
Appendix G
Covering letter for post-natal package of instruments

Michelle Earle
Department of Adult Psych.

Dear 

Some months ago you agreed to be involved in the research I am doing through the ante-natal clinics at ................., on how pregnancy and motherhood affects women's thoughts and feelings. At that time you filled out one survey and I was to follow-up with the remaining surveys after the baby was born. I enclose the follow-up surveys as follows,

a) E.P.N.D.S.

b) General Health Questionnaire

Please fill in each one within the next 7 days and return to me in the envelope enclosed at my address (above). It is important to fill out the surveys within 1 week because I am trying to learn about women's thoughts and feelings soon after the birth of a baby.

For most women this will be all that is involved. However a small group of women will be invited to be part of the final stage of the research, by allowing me to video-tape some play between themselves and their babies. This small group of women will be contacted by me on the phone in about 1 month.

If you have any questions please do not hesitate to contact me at .........................on .........................I will be happy to speak with you.

Thank-you for being part of the research. Women who asked for feedback about the results will receive feedback when the research is finished - around the end of 1997. Eventually the results will be used to improve our understanding of pregnancy and motherhood, so that we can help make this process easier for women in the future. Best wishes for health and happiness in 1997.

Yours sincerely,

Michelle Earle
Appendix H
General Health Questionnaire - 28 (GHQ-28, Goldberg, 1978)

**GHQ 28**
David Goldberg

Please read this carefully.

We should like to know if you have had any medical complaints and how your health has been in general, over the past few weeks. Please answer ALL the questions on the following pages simply by underlining the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past.

It is important that you try to answer ALL the questions.

Thank you very much for your co-operation.

<table>
<thead>
<tr>
<th>Question</th>
<th>Better than usual</th>
<th>Same as usual</th>
<th>Worse than usual</th>
<th>Much worse than usual</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 - been feeling perfectly well and in good health?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2 - been feeling in need of a good tonic?</td>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A3 - been feeling run down and out of sorts?</td>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A4 - felt that you are ill?</td>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A5 - been getting any pains in your head?</td>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A6 - been getting a feeling of tightness or pressure in your head?</td>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>A7 - been having hot or cold spells?</td>
<td>Not at all</td>
<td></td>
<td></td>
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<tr>
<td>B1 - lost much sleep over worry?</td>
<td>Not at all</td>
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<tr>
<td>B2 - had difficulty in staying asleep once you are off?</td>
<td>Not at all</td>
<td></td>
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<tr>
<td>B3 - felt constantly under strain?</td>
<td>Not at all</td>
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<tr>
<td>B4 - been getting edgy and bad-tempered?</td>
<td>Not at all</td>
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<tr>
<td>B5 - been getting scared or panicky for no good reason?</td>
<td>Not at all</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>B6 - found Better than usual</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B7 - found Not at all</td>
<td></td>
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<td></td>
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<tr>
<td>B8 - found Not at all</td>
<td></td>
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<td>B9 - found Not at all</td>
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<td>B10 - found Not at all</td>
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<td>B11 - found Not at all</td>
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<td>B12 - found Not at all</td>
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<td>B15 - found Not at all</td>
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<td>B16 - found Not at all</td>
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<td>B25 - found Not at all</td>
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<td>B26 - found Not at all</td>
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<td>B27 - found Not at all</td>
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<tr>
<td>B28 - found Not at all</td>
<td></td>
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</tbody>
</table>
Appendix H continued.

Have you recently

C1 - been managing to keep yourself busy and occupied?

<table>
<thead>
<tr>
<th>More so than usual</th>
<th>Same as usual</th>
<th>Rather less than usual</th>
<th>Much less than usual</th>
</tr>
</thead>
</table>

C2 - been taking longer over the things you do?

<table>
<thead>
<tr>
<th>Quicker than usual</th>
<th>Same as usual</th>
<th>Longer than usual</th>
<th>Much longer than usual</th>
</tr>
</thead>
</table>

C3 - felt on the whole you were doing things well?

<table>
<thead>
<tr>
<th>Better than usual</th>
<th>About the same</th>
<th>Less well than usual</th>
<th>Much less well</th>
</tr>
</thead>
</table>

C4 - been satisfied with the way you've carried out your task?

<table>
<thead>
<tr>
<th>More satisfied</th>
<th>About same as usual</th>
<th>Less satisfied than usual</th>
<th>Much less satisfied</th>
</tr>
</thead>
</table>

C5 - felt that you are playing a useful part in things?

<table>
<thead>
<tr>
<th>More so than usual</th>
<th>Same as usual</th>
<th>Less useful than usual</th>
<th>Much less useful</th>
</tr>
</thead>
</table>

C6 - felt capable of making decisions about things?

<table>
<thead>
<tr>
<th>More so than usual</th>
<th>Same as usual</th>
<th>Less so than usual</th>
<th>Much less capable</th>
</tr>
</thead>
</table>

C7 - been able to enjoy your normal day-to-day activities?

<table>
<thead>
<tr>
<th>More so than usual</th>
<th>Same as usual</th>
<th>Less so than usual</th>
<th>Much less than usual</th>
</tr>
</thead>
</table>

D1 - been thinking of yourself as a worthless person?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>No more than usual</th>
<th>Rather more than usual</th>
<th>Much more than usual</th>
</tr>
</thead>
</table>

D2 - felt that life is entirely hopeless?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>No more than usual</th>
<th>Rather more than usual</th>
<th>Much more than usual</th>
</tr>
</thead>
</table>

D3 - felt that life isn’t worth living?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>No more than usual</th>
<th>Rather more than usual</th>
<th>Much more than usual</th>
</tr>
</thead>
</table>

D4 - thought of the possibility that you might make away with yourself?

<table>
<thead>
<tr>
<th>Definitely not</th>
<th>I don’t think so</th>
<th>Has crossed my mind</th>
<th>Definitely have</th>
</tr>
</thead>
</table>

D5 - found at times you couldn’t do anything because your nerves were too bad?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>No more than usual</th>
<th>Rather more than usual</th>
<th>Much more than usual</th>
</tr>
</thead>
</table>

D6 - found yourself wishing you were dead and away from it all?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>No more than usual</th>
<th>Rather more than usual</th>
<th>Much more than usual</th>
</tr>
</thead>
</table>

D7 - found that the idea of taking your own life kept coming into your mind?

<table>
<thead>
<tr>
<th>Definitely not</th>
<th>I don’t think so</th>
<th>Has crossed my mind</th>
<th>Definitely has</th>
</tr>
</thead>
</table>
Appendix I
Edinburgh Postnatal Depression Scale (EPNDS, Cox, Holden & Sargovsky, 1987)

K.P.D.S.
J.L. Cox, J.K. Holden, R. Sargovsky
Department of Psychiatry, University of Edinburgh

Code Number:
Date:

As you have recently had a baby, we would like to know how you are feeling. Please underline the answer which comes closest to how you have felt in the past 7 days, not just how you feel today.

Here is an example, already completed.

I have felt happy:

Yes, all the time
✓ Yes, most of the time
No, not very often
No, not at all

This would mean: "I have felt happy most of the time" during the past week. Please complete the other questions in the same way.

In the past 7 days:

I have been able to laugh and see the funny side of things
As much as I always could
Not quite so much now
Definitely not so much now
Not at all

I have looked forward with enjoyment to things
As much as I ever did
Rather less than I used to
Definitely less than I used to
Hardly at all

I have blamed myself unnecessarily when things went wrong
Yes, most of the time
Yes, some of the time
Not very often
No, never

I have been anxious or worried for no good reason
No, not at all
Hardly ever
Yes, sometimes
Yes, very often

I have felt scared or panicky for no very good reason
Yes, quite a lot
Yes, sometimes
No, not much
No, not at all

Things have been getting on top of me
Yes, most of the time I haven't been able to cope at all
Yes, sometimes I haven't been coping as well as usual
Appendix I continued.

7. I have been so unhappy that I have had difficulty sleeping
   Yes, most of the time
   Yes, sometimes
   Not very often
   No, not at all

8. I have felt sad or miserable
   Yes, most of the time
   Yes, quite often
   Not very often
   No, not at all

9. I have been so unhappy that I have been crying
   Yes, most of the time
   Yes, quite often
   Only occasionally
   No, never

10. The thought of harming myself has occurred to me
   Yes, quite often
   Sometimes
   Hardly ever
   Never
Appendix J
Semi structured interview schedule for collecting information to be used in scoring the MDCL-MDE

"I’m here to find out more about how you feel and about being a mother, a follow-up of the questionnaires you have filled out."

“What was the labour like?”

“What was it like bringing the baby home?”

“How is it going now?”

“What’s it like being a mother?”

“How are you sleeping, eating, routine?”

“What are your plans now?”

After the initial introduction answer any questions the participant has about the interview before continuing. When ready to continue ask the remaining questions in order. Neutral prompts or inquiries such as “Right”, “Yes”, “I see”, What do you mean by ..........” and “How do you mean...........”, only should be used.

When all topics had been covered (within 30-60 minutes) answer any questions about the research, then thank the participant for her contribution and reminded her of the feedback which she will receive towards the close of 1997. Conclude the interview.
Appendix K
Instructions for participants during the infant-mother interaction session

"I’ll explain the way I’ve organised this session, so you know exactly what to expect. The first 10-20 minutes will be a warm-up period, an opportunity for you to ease into the session and ask any questions you might have. When you are ready I will set the camera to record and will leave the room, to take a seat in the observation room next door (pointing to the two-way mirror) for 12 minutes, while you and the baby play together. The outline here (pointing to the designated space on the carpet) follows the viewfinder of the camera, so I’d like you to try and stay within it. When 12 minutes is over I will knock on the door and come in, then turn the camera off. We will then have 20-30 minutes of cooling down time for you to talk about how things went and to ask any other questions you might have. I will be the only person sitting in the viewing room. The video-tape of your play will be anonymous and will be used only by me for the purposes of this research. Is there anything I haven’t explained or that isn’t clear? “
## Appendix L

Scoring Guide for the Pregnancy Six to Nine Months Questionnaire  
(P6-9MQ, Sharp, 1995)

<table>
<thead>
<tr>
<th>Broad Theme and Item Number</th>
<th>Variable name</th>
<th>Type of Item</th>
<th>Left anchor score</th>
<th>Right anchor score</th>
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<td>6</td>
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<tr>
<td>1c</td>
<td>lie down</td>
<td>FR</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>1d</td>
<td>monitor</td>
<td>FR</td>
<td>0</td>
<td>6</td>
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<td></td>
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<td></td>
</tr>
<tr>
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<td>body know</td>
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<tr>
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<td>complete</td>
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</table>

1 FR denotes items specifically designed to assess facilitator - regulator characteristics.  
GENERAL denotes items included in the scale to assess other aspects of women's expectations not specifically related to facilitator - regulator theory.
Appendix L continued.

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Variable</th>
<th>Type of Item</th>
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<th>Right anchor</th>
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<tbody>
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<td>stranger</td>
<td>FR</td>
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<tr>
<td>1d</td>
<td>easyeat</td>
<td>GENERAL</td>
<td>6</td>
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<tr>
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<td>demand</td>
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</tr>
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<td>mostmth</td>
<td>FR</td>
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<tr>
<td>5c</td>
<td>fullmth</td>
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<td>5d</td>
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<td>5e</td>
<td>waitnorm</td>
<td>FR</td>
<td>0</td>
<td>6</td>
</tr>
</tbody>
</table>
Appendix M

Pregnancy and Childbirth Examples - I (PCE-I, Raphael-Leff, 1996)

PREGNANCY AND CHILDBIRTH EXAMPLES

Please tick which one of the following is most like your own view.

[ ] 'Pregnancy is a exciting, special and important time for a woman. Ideally, birth should be a natural shift for the baby from inside to outside. That is why it is important for the woman not to have drugs or be separated from the baby after birth. I imagine that I will have a special understanding of the baby that no one else can have because I carried he/she for 9 months. I imagine that motherhood will be very satisfying'.

[ ] 'Pregnancy is fun but hard. I look forward to the baby but know he/she will cause changes in my life. Many different things can happen at the birth so it's better not to have set ideas about it. I imagine that being a mother will be hard because it means thinking about many peoples' needs at the same time. Though I may not always know what the baby wants I imagine that by watching and feeling my way I'll understand'.

[ ] 'Pregnancy is a way of getting a baby. Ideally, the birth should be fast with little pain for the woman. Though motherhood may be fun for a woman she is still a separate, independent person and it is important not to make herself the centre of the baby's world. I imagine motherhood will be something I learn from others and that it will be important for the baby to feel there are other helpful people around'.

Thank you.
The Munich Diagnostic Checklist - Major Depressive Episode (MDCL-MDE)

### Chronic Course

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>[10, 14] Decrease of self-esteem or self-dislike in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Decreased appetite or increased appetite in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Loss of sexual interest or desire in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Feeling of guilt or sense of unworthiness in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Feeling of hopelessness or helplessness in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Feeling of being overweight in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Feeling of being underweight in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Feelings of irritability, lability, or functional restlessness in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Feelings of anxiety in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Feelings of depression in the morning or evening</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Episode

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>[10, 14] Feelings of being overactive in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Feelings of being underactive in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Feelings of being fatigued in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Feelings of being awake in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Feelings of being sleepy in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Feelings of being relaxed in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Feelings of being tense in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Feelings of being anxious in the morning or evening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[10, 14] Feelings of depression in the morning or evening</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Melancholic Type

- Consider only non-organic symptoms
- Exclude all symptoms in the same 2-week period
- Minimum duration of all symptoms: 2 weeks
- Define the pattern of depressive symptomatology

### Major Depressive Episode

- Specify if symptoms can be classified as chronic
- Specify if criterion for melancholic Type are met

### Appendix N

(Hiller, Zaudig & Mombour, 1989)
Additional data on this item for individuals do not include those in total score.

Second, positive affect can also be scored separately for mother and infant, yielding
+ Note: Mutual attention can yield an interval score if rated from videotape in actual minutes and


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<table>
<thead>
<tr>
<th>Item</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mutual attention (time)</td>
<td>+1</td>
</tr>
<tr>
<td>2. Positive affect</td>
<td>+2</td>
</tr>
<tr>
<td>3. Turn-Taking</td>
<td>0</td>
</tr>
<tr>
<td>4. Maternal pauses</td>
<td>-4</td>
</tr>
<tr>
<td>5. Intra-int tract continue</td>
<td>-5</td>
</tr>
<tr>
<td>6. Maternal sensitive</td>
<td>-6</td>
</tr>
<tr>
<td>7. unclear negation</td>
<td>-7</td>
</tr>
<tr>
<td>8. Very brief</td>
<td>-8</td>
</tr>
<tr>
<td>9. Negation, neutral</td>
<td>-9</td>
</tr>
<tr>
<td>10. - 12</td>
<td></td>
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<tr>
<td></td>
<td></td>
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</table>

Summary Ratings:

Sum of Items (range 6 - 12) Total Score =

High Responsivity = 10 - 12
Moderate Responsivity = 9
Low Responsivity = 6 - 8

Right Responsivity

6. Maternal Sensitive
5. Intra-int tract continue
4. Maternal pauses
3. Turn-Taking
2. Positive affect
1. Mutual attention (time)
Appendix P
Cell Frequencies for Responses of (Collapsed) Facilitator Group and the (Mixed) Facilitator/Regulator Group to the 24 Facilitator/Regulator Items of the P6-9MQ

<table>
<thead>
<tr>
<th>Item</th>
<th>Regulator-type anchor</th>
<th>Facilitator-type anchor</th>
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<td>(Mixed Facilitator/Regulator)</td>
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<td>(Collapsed) Facilitator</td>
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### Appendix Q
Record of contacts with J. Raphael-Leff

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### Appendix R

**Record of contacts with H. M. Sharp**

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<td>Fax</td>
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<td>20.8.1996</td>
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<td>Fax</td>
<td>Contact details for J. Raphael-Leff &amp; other researchers in the area</td>
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Appendix R continued.

17.12.1998    H.M. Sharp    Letter

Clarityification of Sharp's (1995)
results

4.1.1999       H. M. Sharp   Letter

Conceptualisation, classification,
distribution of maternal orientation
& study results as above