# Maternal orientation in pregnancy and early motherhood: Infant caregiving practices and maternal adjustment

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## TABLE OF CONTENTS


**LIST OF TABLES** ..... i

**LIST OF FIGURES** ..... ii

**ABSTRACT** ..... iii

**CERTIFICATION BY CANDIDATE** ..... v

**ACKNOWLEDGEMENTS** ..... vi

**DEDICATION** ..... viii

**CHAPTER 1:**

**INTRODUCTION** ..... 1

**The Historical Context of Mothering** ..... 2
**Psychoanalytical Theories** ..... 7
**Maternal Orientation Theory** ..... 10
**Attachment Theory** ..... 18
**Parallels Between Maternal Orientation and Attachment Theory** ..... 22
**Facilitators and Regulators: Psychometric properties of maternal orientation measures in pregnancy** (Chapter 3) ..... 25
**Facilitators and Regulators: Infant sleep practices and maternal subjective well-being** (Chapter 4) ..... 33
**Facilitators and Regulators: Antenatal maternal orientation and postnatal parenting practices** (Chapter 5) ..... 37
**Facilitators and Regulators: Predicting maternal depression symptoms and mothers' Subjective attachment to their infants** (Chapter 6) ..... 38
**Summary of Research Aims** ..... 40
**REFERENCES** ..... 43

**CHAPTER 2:**

**METHOD** ..... 51

**Overview of the research design** ..... 52
**Participants** ..... 52
**Procedure** ..... 52
**Measures** ..... 53
***Maternal Orientation Measures*** ..... ***53***
*Facilitator Regulator Questionnaire (FRQ)* ..... *54*
*Antenatal Maternal Orientation Measure (AMOM) and Antenatal Maternal Orientation Measure – Revised (AMOM-R)* ..... *56*
*Placental Paradigm Questionnaire (PPQ subscales)* ..... *58*
***Psychosocial Correlates*** ..... ***60***
*Attachment Style Questionnaire (ASQ)* ..... *60*
*Concepts of Development Questionnaire (CODQ)* ..... *60*
***Maternal Caregiving Practices*** ..... ***61***
*Infant Feeding Type* ..... *61*
*Scheduling of Infant Feeds and Sleeps (IFS, ISS)* ..... *61*
*Parental Interactive Bedtime Behaviour Scale (PIBBS)* ..... *62*
*Leave to cry* ..... *63*
*Mother-infant proximity overnight* ..... *63*
***Indices of Maternal Adjustment*** ..... ***63***
*Experience of Motherhood Questionnaire (EMQ)* ..... *63*
*Edinburgh Postnatal Depression Scale (EPDS)* ..... *64*
*Maternal Postnatal Attachment Scale (MPAS)* ..... *65*
**REFERENCES** ..... 68

**CHAPTER 3:**

**FACILITATORS AND REGULATORS:**
**PSYCHOMETRIC PROPERTIES OF MATERNAL ORIENTATION MEASURES IN PREGNANCY ..... 71**

**ABSTRACT ..... 73**
**INTRODUCTION ..... 74**
***Construct Validity ..... 79***
*Attachment Style ..... 80*
*Parental Concepts of Children ..... 81*
**METHOD ..... 83**
***Participants ..... 83***
***Procedure ..... 84***
***Antenatal Maternal Orientation Measures ..... 85***
***Psychosocial Measures ..... 88***
***Data Analysis ..... 89***
**RESULTS ..... 90**
***Psychometric Properties of Maternal Orientation Measures ..... 90***
*Reliability Analysis ..... 90*
*Construct Validity ..... 91*
**DISCUSSION ..... 96**
***Internal Consistency ..... 96***
***Construct Validity ..... 97***
***Strengths and Limitations ..... 100***
**CONCLUSIONS ..... 100**
**REFERENCES ..... 102**

**CHAPTER 4:**

**FACILITATORS AND REGULATORS:**
**INFANT SLEEP PRACTICES AND MATERNAL SUBJECTIVE WELL-BEING ..... 105**

**ABSTRACT ..... 107**
**INTRODUCTION ..... 108**
***Infant Caregiving Practices ..... 110***
***Maternal Subjective Well-being ..... 110***
***Study Aims ..... 111***
***Confounding Influences ..... 112***
***Hypotheses ..... 113***
**METHOD ..... 114**
***Participants ..... 114***
***Procedure ..... 114***
***Measures ..... 114***
*Postnatal Maternal Orientation ..... 114*
*Infant Sleep Practices ..... 115*
*Maternal Subjective Well-being ..... 117*
***Confounding Variables ..... 117***
***Data Analysis ..... 118***
**RESULTS ..... 119**
***Participant Characteristics ..... 119***
***Infant Sleep Practices ..... 119***
***Maternal Subjective Well-being ..... 122***
**DISCUSSION ..... 122**
***Infant Sleep Practices ..... 123***
***Maternal Subjective Well-being ..... 124***
***Strengths and Limitations ..... 125***
***Future Research ..... 126***
**CONCLUSIONS ..... 128**
**REFERENCES ..... 129**

## CHAPTER 5:

**FACILITATORS AND REGULATORS:**
**ANTENATAL MATERNAL ORIENTATION AND POSTNATAL PARENTING PRACTICES ..... 133**

**ABSTRACT ..... 135**
**INTRODUCTION ..... 136**
***Hypotheses ..... 139***
**METHOD ..... 139**
***Participants ..... 139***
***Procedure ..... 140***
***Maternal Orientation Measures ..... 142***
***Infant Caregiving Practices ..... 143***
***Confounding Variables ..... 143***
***Data Analysis ..... 144***
**RESULTS ..... 145**
***Sample Attrition and Participant Characteristics ..... 145***
***Preliminary Analyses ..... 147***
***Hypotheses Testing ..... 149***
*Antenatal and postnatal maternal orientation ..... 149*
*Postnatal maternal orientation and caregiving practices ..... 149*
*Antenatal maternal orientation and postnatal caregiving practices ..... 152*
**DISCUSSION ..... 153**
***Strengths and Limitations ..... 156***
***Future Research ..... 158***
**CONCLUSIONS ..... 160**
**REFERENCES ..... 162**

## CHAPTER 6:

**FACILITATORS AND REGULATORS:**
**PREDICTING MATERNAL DEPRESSION SYMPTOMS AND MOTHERS' SUBJECTIVE ATTACHMENT TO THEIR INFANTS ..... 165**

**ABSTRACT ..... 167**
**INTRODUCTION ..... 168**
***Maternal Orientation and Symptoms of Depression ..... 169***
***Maternal Orientation and Subjective Attachment to the Infant ..... 170***
***Maternal Orientation Measures ..... 172***
**METHOD ..... 174**
***Participants ..... 174***
***Procedure ..... 174***
***Measures ..... 174***
***Confounding Variables ..... 177***
***Data Analysis ..... 178***
**RESULTS ..... 179**
***Participants ..... 179***
***Preliminary Analyses ..... 179***
***Bivariate Analyses ..... 181***
***Path Analyses ..... 182***
**DISCUSSION ..... 185**
***Maternal Orientation and Symptoms of Depression (T1 pregnancy, T2 postpartum) ..... 186***
***Maternal Orientation and Subjective Attachment to the Infant (T2, postpartum) ..... 186***
***Strengths and Limitations ..... 187***
**CLINICAL IMPLICATIONS AND CONCLUSIONS ..... 190**
**REFERENCES ..... 191**

**CHAPTER 7:**

**DISCUSSION ..... 195**

**STRENGTHS AND MAJOR CONTRIBUTIONS OF THE RESEARCH** ..... 196
***Antenatal Maternal Orientation Measure-Revised (AMOM-R)*** ..... ***197***
***Findings Related to Infant Caregiving and Maternal Adjustment*** ..... 199
*Infant Caregiving Practices* ..... *200*
*Maternal Adjustment* ..... *202*
***The Stability of Maternal Orientation*** ..... *204*
***Confounding Variables*** ..... ***205***
**LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH** ..... ***207***
***Infant Factors*** ..... ***207***
***Social Support*** ..... ***208***
***Social Desirability and Prevailing Views on "Good Mothering"*** ..... ***209***
***Homogeneous Sample*** ..... ***211***
***The Experience of Childbirth*** ..... ***212***
**IMPLICATIONS FOR THE MEASUREMENT OF MATERNAL ORIENTATION** ..... **213**
***Antenatal Maternal Orientation Measure-Revised (AMOM-R)*** ..... ***214***
***Placental Paradigm Questionnaire (PPQ subscales)*** ..... ***214***
***Facilitator and Regulator Questionnaire (FRQ)*** ..... ***216***
***A New Combined Measure?*** ..... ***217***
***The Measurement of Conflicted Individuals and Possible Psychopathology*** ..... ***218***
**IMPLICATIONS FOR COMMUNITY AND CLINICAL POPULATIONS** ..... **220**
**CONCLUSIONS** ..... **222**
**REFERENCES** ..... **224**

**APPENDICES ..... 231**

**APPENDIX A**
***Comparison of Published Empirical Studies that have Operationalised Raphael-Leff's Concept of Maternal Orientation*** ..... ***232***
**APPENDIX B**
***Facilitator and Regulator Questionnaire (FRQ)*** ..... ***237***
**APPENDIX C**
***Antenatal Maternal Orientation Measure-Revised (AMOM-R)*** ..... ***240***
**APPENDIX D**
***Placental Paradigm Questionnaire (PPQ subscales)*** ..... ***242***
**APPENDIX E**
***Infant Feeding and Sleep Schedules (IFS, ISS)*** ..... ***243***
**APPENDIX F**
***Parental Interactive Bedtime Behaviour Scale (PIBBS)*** ..... ***244***
**APPENDIX G**
***Ethics Approval for the Research detailed in Chapters 3 and 4*** ..... ***245***
**APPENDIX H**
***Ethics Approval for the Research detailed in Chapters 5 and 6*** ..... ***247***
**APPENDIX I**
***Facilitators and Regulators: Psychometric properties of maternal orientation measures in pregnancy (Published paper)*** ..... ***251***
**APPENDIX J**
***Facilitators and Regulators: Infant sleep practices and maternal subjective well-being (Published paper)*** ..... ***273***

# List of Tables

**CHAPTER 2** ..... **51**

***TABLE 2.1***

*Overview of Methodology for Research Papers (N = 230)* ..... *67*

**CHAPTER 3** ..... **71**

***TABLE 3.1***

*Sample Demographics (N = 230)* ..... *85*

***TABLE 3.2***

*Psychometric Properties of the FRQ (prenatal form), the AMOM-R and PPQ subscales (N = 230)* ..... *91*

***TABLE 3.3***

*Inter-correlations among Maternal Orientation scales: FRQ (prenatal form), AMOM-R and PPQ subscales (N = 230)* ..... *92*

***TABLE 3.4***

*Antenatal Maternal Orientation and its Relationship to Parity, Current Work Status, Pregnancy Planning and Physical Health in Pregnancy* ..... *93*

***TABLE 3.5***

*Correlations among Antenatal Maternal Orientation, Attachment Style Questionnaire (ASQ) and Concepts of Development Questionnaire (CODQ) (*N *= 230)* ..... *95*

**CHAPTER 4** ..... **105**

***TABLE 4.1***

*Maternal Orientation Differences for Categorical Infant Sleep Variables (N = 251)* ..... *120*

***TABLE 4.2***

*Odds Ratios (99% Confidence Interval) for Incremental Logistic Regression and Coefficient (99% Confidence Interval) for Hierarchical Linear Regression related to Infant Sleep Practices and Maternal Subjective Well-being (*N *= 251)* ..... *121*

**CHAPTER 5** ..... **133**

***TABLE 5.1***

*Participant Characteristics (*N *= 192)* ..... *146*

***TABLE 5.2***

*Psychometric Properties of Antenatal Maternal Orientation Scales (AMOM-R, PPQ subscales), Postnatal Maternal Orientation (FRQ), and Postpartum Scheduling of Infant Feeding and Sleeps (IFS, ISS) (*N *= 192)* ..... *147*

***TABLE 5.3***

*Correlations among Antenatal Postnatal Maternal Orientation Measures (*N *= 164; Conflicted Individual on the FRQ omitted)* ..... *150*

***TABLE 5.4***

*Odds Ratios (99% confidence interval) for Logistic and Ordinal Regression, and Unstandardised Coefficients for General Linear Multivariate Model related to Infant Feeding and Sleep Practices (N = 192)* ..... *151*

# List of Tables

**CHAPTER 6** ..... **165**
***TABLE 6.1***
*Participant Characteristics (*N *= 196)* ..... *180*
***TABLE 6.2***
*Psychometric Properties of the Maternal Orientation scales (AMOM-R, PPQ subscales), the Edinburgh Postnatal Depression Scale (EPDS) and the Maternal Postnatal Attachment Scale (MPAS;* N *= 196)* ..... *181*
***TABLE 6.3***
*Point Biserial and Pearson Correlation among Maternal Orientation, Maternal Symptoms of Depression, Maternal Subjective Postnatal Attachment and Demographic Variables (*N *= 196)* ..... *183*

# List of Figures

**CHAPTER 2** ..... **51**
***FIGURE 2.1***
*Example of the original AMOM item format* ..... *56*
***FIGURE 2.2***
*Example of modified AMOM-R item format* ..... *58*
***FIGURE 2.3***
*Example of extended response set used with the PPQ Facilitator and Regulator subscales* ..... *59*

**CHAPTER 6** ..... **165**
***FIGURE 6.1***
*Theoretical model illustrating the impact of maternal orientation on mothers' feelings of depression and attachment toward their infant postpartum* ..... *182*
***FIGURE 6.2***
*Trimmed model showing the effect of level of education, antenatal maternal orientation (PPQ Regulator scale, AMOM-R Facilitator scale) and depressive symptoms on mothers' postnatal feelings of attachment toward their infant.* ..... *184*

**Abstract**

Maternal orientation theory outlines two orientations to motherhood (Raphael-Leff, 1983). The Facilitator orientation is characterised by idealisation of the infant and the mothering role, and caregiving practices reflecting an infant-led approach. The Regulator orientation is described as a more resistant stance, where the mother seeks to defend herself from being overwhelmed by the infant and motherhood, with caregiving typified by a scheduled mother-led approach. The theory proposes that distinct intrapsychic processes predict caregiving practices, psychological adjustment during the transition to parenthood and individual differences in maternal vulnerability. However, there is little empirical evidence to support these propositions. Furthermore, three different maternal orientation measures have been used in the literature making it difficult to generalise across studies.

This thesis addresses four research aims. Two studies aimed to explore the psychometric properties of the maternal orientation measures and assess relations with caregiving practices and maternal adjustment concurrently. Results from these exploratory studies informed two further prospective studies to test relationships between maternal orientation in pregnancy and caregiving, and maternal adjustment in the early months postpartum.

The first study (*N* = 230 expectant mothers) explored the psychometric properties of the three empirical measures of maternal orientation in pregnancy. These three measures were modestly correlated, and a revised version of the Antenatal Maternal Orientation Measure (AMOM; Sharp & Bramwell, 2004), the Antenatal Maternal Orientation Measure-Revised (AMOM-R), emerged as the most reliable and valid measure.

The second study (*N* = 274 mothers of infants aged 4–7 months) examined whether postnatal maternal orientation was associated concurrently with infant caregiving practices and maternal feelings of well-being. As expected, women with a more Facilitator orientation endorsed caregiving practices with an infant-led focus. However, postnatal maternal orientation was not associated with maternal subjective well-being.

The third and fourth studies (*N* = 218) used a longitudinal design to investigate whether maternal orientation measured in pregnancy could predict postnatal maternal orientation, infant caregiving methods and maternal adjustment in the early months postpartum. Findings provide modest support for the stability of the construct, and confirmed that a more Facilitator orientation was related to a more infant-led style of caregiving postpartum, lower symptoms of depression in both pregnancy and postpartum, and more positive maternal feelings of attachment to the infant postpartum.

Clinical implications for antenatal education and for child and family health professionals are discussed.

## Certification by Candidate

This thesis entitled "Maternal orientation in pregnancy and early motherhood: Infant caregiving practices and maternal adjustment" is submitted to Macquarie University in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

The research detailed in this thesis represents work undertaken while I was a PhD student within the Department of Psychology, Faculty of Human Sciences, Macquarie University from 2009–2013, under the guidance and supervision of Associate Professor Catherine McMahon. Candidate contributions specific to each study are detailed at the beginning of Chapters 3, 4, 5 and 6. Any help or assistance I received in the preparation of this thesis has been appropriately acknowledged. The work presented in this thesis is original and has been written by me. All information sources and the literature included are referenced appropriately throughout. Finally, I hereby declare that I have not submitted this material, either in full or part, for a degree at this or any other institution.

The research presented in this thesis involved voluntary participation. Ethics approval was provided by relevant ethics committees, with documentation included in the Appendices of this thesis. Appendix G – Macquarie University Human Research Ethics Committee Reference numbers: HE27NOV2009-D00209 (16 December, 2009), 5201000419 (9 April, 2010), and Appendix H – Northern Sydney Central Coast NSW Health, Hawkesbury Human Research Ethics Committee Protocol: 1002-041M(other) (30 March, 2010).

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The research articles within this thesis would not have been possible without access to mothers and their babies. The first two studies benefited greatly from the help of online mother and baby forums for recruitment, such as BubHub, Essential Baby, BabyCenter

Australia, Raising Children Network and Single Mother Forum, as well as the Australian Breastfeeding Association and the Australian Multiple Births Association. In relation to the third and fourth studies, I am greatly indebted to staff at the Royal Hospital for Women, Randwick, Saint John of God Perinatal and Women's Health Centre, Burwood, and the Royal North Shore Public and Royal North Shore Private Hospitals in St Leonards. To all the women who participated, the time that you contributed toward increasing our understanding of the experience of motherhood was given at very busy times in your lives, I thank you sincerely.

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## Dedication

To my husband, Flavio, who has supported me continually and without question throughout my academic studies, as well as being an exemplary husband and father. I would never have entered the door to a university without your encouragement.

To our beautiful children, Luca, Joshua and Ilaria, you are the inspiration for this work. You teach me every day about the important things in life and this work is dedicated to you and your future paths.

# CHAPTER 1

# Introduction

# Introduction

Throughout history, mothers have attracted the best and the worst of labels. Similarly the experience of becoming a mother involves a wide range of emotions, some of them challenging. As a result, there are substantial differences among women in the way they approach, adapt to and integrate the mothering role. This thesis focuses on Raphael-Leff's theory of maternal orientation, a theory that describes individual differences in orientation to motherhood and classifies these different approaches into meaningful groups, with the broad aim of increasing understanding of what it means to be a mother.

Prior to introducing the theory of maternal orientation and the four research studies within this thesis that extend empirical work in the field, the historical context of mothering is briefly considered, along with psychoanalytic theories that seek to explain psychological adaptation to motherhood. This broader context is important for two reasons: firstly, the modern experience of mothering can only be fully appreciated within the social and cultural framework from which it has emerged; and secondly, maternal orientation theory has its roots across both social and scientific domains. In addition, parallels between maternal orientation theory and attachment theory are discussed, whilst acknowledging shared origins of both theories in psychoanalytic theory.

## The Historical Context of Mothering

Over the past two centuries, society has come to expect a great deal from mothers, and mothers have come to expect much of themselves. However, exactly *what* has been expected has changed throughout history. The definition of what constitutes optimal mothering has changed dramatically and continues to be a constantly evolving notion (Goodwin & Huppatz, 2010). At times, advice from one philosophical approach to infant care

has been entirely opposed by another. A brief account of the history of mothering in developed societies allows us to trace the political and social forces that have shaped views on mothering. The remnants of these often conflicting edicts are reflected in the extreme and opposed ends of contemporary mothering practices today.

Infant mortality rates in developed countries declined dramatically from 1880 to 1950, with near identical patterns documented for Australia, England, the United States and New Zealand (Hardyment, 2007; Mein Smith, 1991). Improvements in infant health were largely due to rising living standards, sanitation, women's education, family planning methods and medical breakthroughs. As infant health improved and the birthrate declined, interest in child development grew with a particular focus on the importance of the early months of life. Child study associations and scientific journals were founded in Britain and the USA to document the development of the human infant. Government initiatives also evolved to further ensure the survival of the smaller number of infants that were being born (Hardyment, 2007). In the early 1900s, Australia followed Britain in establishing institutions for teaching mothercraft skills, including home visits to mothers and infants, and later, the emergence of a network of baby health clinics, still in operation today. Protagonists promoted these initiatives as the single most effective contribution to improvements in infant health (Mein Smith, 1991). Motherhood around the world was on the verge of a transition from the domestic domain to the public sphere.

Alongside the decline in infant mortality and the greater investment in the individual child, there was growing public opinion on the way babies should be mothered. No other role has attracted so much emotionally laden expectation, judgement, pressure and conflicting advice. At the turn of the 20$^{th}$ century, childcare manuals appeared in large

numbers, dictating in meticulous detail the manner in which babies should be managed. It became recognised that mothers were not only entrusted with the physical, but also the psychological, aspects of development. Consequently, they were cautioned fervently about irreparable consequences to their infant's temperament and nervous system if they failed to deliver the required infant care in the precise form recommended. Babies were considered malleable and vulnerable, and their brains could be seared by poor habits created in infancy (Hardyment, 2007).

The 1920s were defined by the emergence of Scientific Mothering. Behaviourist John B. Watson, questioned mothering as a natural, feminine and intuitive process. With growing scientific knowledge in other domains, he argued that childrearing should be reconceptualised as a science. Childrearing was thought best relegated to those who could attend to the infant within a regimented, predictable and measurable model of care. Authorities on the subject were predominantly male, and women were being displaced as the traditional specialists on childrearing. Following the "experts", mothers were encouraged to read manuals and to steer clear of advice from their own mothers and grandmothers. Scientific approaches to motherhood were identified as the best way to prevent the mistakes of previous generations, and the methods were believed crucial to turning out a superior child (Arnup, 1990; Hardyment, 2007). In that era, parallels can be drawn to the political and social upheavals arising from rigid ideologies such as Marxism, totalitarianism, Fascism and Nazism, where broadly speaking there was a "right" way and a "wrong" way of living (Hendrick, 1997).

At the same time, Truby King and the New Zealand Plunkett Society influenced policy surrounding infant care in Britain and Australia (Mein Smith, 1991). To raise a "well-adjusted

baby" (Hendrick, 1997, p. 28), mothers were instructed to breastfeed or to use modified cow's milk, eradicating the use of deficient alternatives, and consistent with the edicts of the behaviourists, childcare was to be delivered within a strict and inflexible routine. Regimentation was thought to prevent overfeeding and promote good moral character in the infant (King, 1924). Both Watson and King stressed habit and regularity with a minimum of tenderness. Watson told mothers to never kiss and hug their children, and King ordered that babies must be taught not to cry (Hardyment, 2007). Although interventions were introduced to women living in difficult socio-economic circumstances under the guise of reduction in poverty (Mein Smith, 1991), women who were economically advantaged were better placed to follow prescriptive caregiving programs. Indeed, middle-class mothers remain the target of contemporary childcare advisors to the present day.

Over time, more moderate approaches have emerged privileging maternal intuition, flexible schedules, responsiveness to infant signals and when necessary, gentle coercion. Among many others, the baby-focused philosophies of two renowned infant care authors, Benjamin Spock (1946, 1998) in the USA and Penelope Leach (1977, 2010) in the UK, have been particularly influential. In addition, several factions presenting more radical points of view regarding baby-led mothering have emerged. For instance, the Continuum Concept (Liedloff, 1989) recommends continuous contact between the mother and baby, day and night, and was derived from observations of mothering in primitive cultures. The Attachment Parenting philosophy (e.g., Sears & Sears, 1993, 2005) offers a modern adaptation, with an emphasis on immediate responsiveness to infant distress. Despite the general trend toward more permissive mothering in recent decades, regimented caregiving models, including the Contented Little Baby program promoted by maternity nurse Gina Ford (1999, 2006), remain

in circulation and enjoy considerable popularity. These more regimented programs aim to free up women to take on other roles.

Recent advances in research have also informed modern mothering practices. Mother's milk, considered by some inferior, particularly in the 1950s to the 1970s (Thorley, 2012), more recently regained its status as the best form of nutrition in infancy and breastfeeding is now widely advocated by child and family healthcare professionals (World Health Organization, 2009). Conditions for safe infant sleep have also been specified to reduce the risk of Sudden Infant Death Syndrome (SIDS) cases (e.g., Alm, Wennergren, & Lagercrantz, 2008), and research on parent-infant attachment has been cited to justify encouraging parents to respond promptly, spontaneously and affectionately to their very young infants (e.g., Australian Association for Infant Mental Health, 2004, 2006) to promote healthy parent-infant relationships.

All prescribed approaches to mothering need to be interpreted from a broader cultural context. For instance, the debate is ongoing with regard to mother-infant bed sharing and the reduction of SIDS (McKenna, Ball, & Gettler, 2007) and certain permissive parenting practices around child bedtimes have been associated with long-term infant wakefulness (Johnson & McMahon, 2008). Both public opinion and scientific debate surrounding contemporary mothering practices are not without controversy.

Modern day mothers are left with a multitude of choices for infant care. The dilemma of finding the "right" fit for their personality, life circumstances and cultural context remains challenging. The social judgement implicit in opposing viewpoints often contributes to the confusion and guilt that women experience in early motherhood. As will be shown when the concept of maternal orientation is fully detailed, maternal preferences towards any of these

diverse caregiving methods, ranging from following the baby's lead to regulating the baby, are at the essence of maternal orientation theory.

Prior to presenting a detailed account of maternal orientation theory, psychoanalytic theories regarding mothering are briefly discussed, as maternal orientation theory emerged from this framework.

**Psychoanalytic Theories**

From a psychoanalytic perspective, the importance of motherhood was related to views about the critical role of early caretaking experience in the development of the person. Sigmund Freud asserted that the child's first love object was the mother's breast and identified caregiving actions of stroking, rocking and kissing as reinforcing and teaching the child to love (S. Freud, 1905). Stemming from this seminal work, two traditions emerged. The ego psychologists, including Anna Freud, proposed that an infant's bond with his or her mother was a result of the act of feeding and the pleasure of satiation (A. Freud, 1954) whereas object relations theorists such as Ronald Fairbairn (1956), Michael Balint (1937), Alice Balint (1939) and Donald Winnicott (1949, 1953), proposed that infants were object-seeking, meaning that they actively sought interaction with another, rather than being driven by oral gratification (Ainsworth, 1969). As disturbance in object relations was thought to be the source of all psychopathology, poor maternal functioning was believed to be associated with childhood maladjustment. Mothers who created unsatisfying and disappointing exchanges (M. Balint, 1935) or who were emotionally unavailable were not perceived as "good enough" by their infants, reducing their infants' ability to interact empathetically in subsequent relationships (Winnicott, 1960). Indeed, Winnicott spoke of the mother needing to be sufficiently preoccupied with her infant to create a "holding environment" that was

good enough to ensure the development of the "true self" rather than the "false self" (Kenny, 2013, p. 126).

Other psychoanalytic theorists focused more on the mother's experience, and emphasised pregnancy as an impetus for psychological maturation. Benedek (1959) described the onset of motherhood as a normative developmental stage for women and suggested that becoming a mother prompted maternal psychological change, which if successfully navigated, would bring about reciprocal benefits for both mother and child. While unresolved issues from the mother's childhood could lead to either the overprotection of her infant or failure to respond appropriately, resolution of new internal conflicts had the potential to enable "a new level of integration" (p. 385) and self-confidence in the mother. This dichotomy of over-involvement versus disengagement/failure to respond is also central to maternal orientation theory.

From a similar developmental perspective, Bibring (1959) defined pregnancy as a crisis or turning point in a woman's life, with both somatic and psychological aspects, similar to puberty or menopause. The failure to resolve "unsettled conflict" (p. 116) and to formulate new insights during the gestational period was believed to be associated with less sensitive and less responsive mothering postpartum. Necessary antenatal deliberations included maintaining the loving relationship with her partner, while reflecting about an infant who was part of her and at the same time a separate being, as well as adapting to changes in identity and responsibility on assuming the mothering role (Bibring, 1959; Cohler & Paul, 2002).

Still other writings from the psychoanalytic tradition have focused on maternal ambivalence, first described by Melanie Klein (1932), as primitive emotional states, fantasies

and the process of emotional splitting. Klein and colleagues (1952) explained that splitting mechanisms are a way of keeping primal anxiety at bay. According to this view, the infant's first object, the breast, is split into both the *good* and the *bad* breast in the infant's mind. Correspondingly, the ego's affect toward the object (the breast) is also split into love and hate. This first relationship becomes the prototype for two primitive attitudes toward the object, the idealised and persecutory. While much of the work in this tradition is theoretical or based on clinical case studies, Birksted-Breen (2000) studied a group of 60 first-time expectant mothers, and reported that women frequently experienced unspoken feelings of love and hate toward the infants growing inside them, which caused them great anxiety. However, those more able to discuss mixed feelings later reported better coping in the postnatal period.

Other psychoanalytic theorists have emphasised intergenerational influences related to the mother's earliest caregiving experiences (Ballou, 1978; Fraiberg, Adelson, & Shapiro, 1975). Fraiberg and colleagues introduced the notion of "ghosts in the nursery" (p.378), and Ballou (1978) proposed that the mother-infant bond was determined in part by a woman's current relationship with her own mother. These theorists proposed that those who were able to come to terms with complexity and mixed feelings in their relationship with their own parents, were better adjusted in pregnancy, had less issues in their intimate partner relationship, and were more able to demonstrate reciprocity with their infant in the early postnatal period. Thus acceptance of mixed feelings (about infants and about one's own parents) was related to better psychological adjustment postpartum. More recently, Almond (2010) has reflected on maternal ambivalence as a normal part of the human condition. She argues that society's difficulty in accepting these normative conflicted mental states, and the

idealisation of motherhood that stands in its place, is problematic for women's adjustment to motherhood. According to Almond, with appropriate support, ambivalent feelings can provide a useful catalyst for mature reflection and psychological adaptation to motherhood.

Winnicott (1953) also explicitly normalised the notion of mixed feelings in his concept of the "good-enough mother". He noted that complete maternal preoccupation cannot be sustained indefinitely and a return to a more balanced standpoint is inevitable, whereby both mother and infant needs are respected. The gradual withdrawal from undivided attention, however, needs to be in harmony with the infant's developmental stage and his or her growing ability to cope with these changes.

Based on this school of psychoanalytic thought, an inability to accept or reconcile conflicting emotions toward the infant could lead to poor adaptation to motherhood. Certainly, Freud and his followers believed that humans are capable of protecting themselves from conflicting internal states (e.g., wishes, drives or fear) that cause anxiety (Kramer, 2010) so that unpleasant emotions remain unexplored. A defensive stance can "alter veridical perception" (Freud, 1936, p. 43, cited by Cramer, 1998) to help shield the ego from conflicts of the id, superego and reality. Defense mechanisms were believed to influence an individual's behaviour in relationships. In the case of mothering, these mental mechanisms may limit the type of caregiving possible, and are at the very essence of maternal orientation theory.

**Maternal Orientation Theory**

From a psychoanalytic perspective, and based on her own clinical experience and small-scale empirical studies, Joan Raphael-Leff (1983, 1985a, 1985b, 1986) developed a theory of maternal orientation to explain individual differences in the way women approach

mothering. In keeping with a psychoanalytic tradition, she proposed that women are influenced by their own experience of being mothered, arguing that childhood experiences of caretaking can be defining and lead to fundamental differences in a woman's adult psyche. Consistent with central propositions of psychoanalytic theory, Raphael-Leff proposed that underlying psychological processes that arise from different caretaking experiences lead to defensive strategies. These defenses direct a woman's feelings toward her unborn infant and herself in the mothering role, her cognitions, perceptions and expectations about motherhood, and ultimately shape her caregiving practices. Although not described as a characteristic trait (the theory acknowledges that circumstances and maternal experience can lead to changes in maternal orientation with subsequent children), maternal orientation is considered largely stable across the transition to motherhood within each childrearing experience, and its impact on the maternal experience enduring (Raphael-Leff, 2009).

While acknowledging that mothering styles are many and varied, Raphael-Leff proposed that women tended toward one of two polar opposite approaches, paralleling the different emphases in "mothering" edicts of childcare experts discussed earlier and the psychoanalytic process of splitting: namely a "Facilitator" or a "Regulator" orientation. In her earliest publication, these orientations were conceptualised as the outermost parameters of a spectrum of possible approaches to mothering (Raphael-Leff, 1983). Most succinctly, the distinction between the two orientations can be summarised as follows: the Facilitator's desire is to adapt to her infant, whereas the Regulator wants her infant to adapt to her. Each end of the spectrum represents an extreme (and defensive) position and the purest form of either orientation.

When detailing each profile, Raphael-Leff explained differences at both the

unconscious and conscious levels of representation, elucidating not only the purported identifications, fantasies and defenses underlying each orientation, but also divergent expectations and perceptions of motherhood and the infant, leading to observable caregiving differences (Raphael-Leff, 1985a, 1986). A parallel theory, the Placental Paradigm (Raphael-Leff, 1995), fundamentally associated with the process of splitting, explains in more depth the intrapsychic processes underlying each orientation. According to this model, there is an imagined interchange between the mother and her baby beginning *in utero* (Benedek, 1959; Deutsch, 1945). The Facilitator envisages both herself and her infant as innately good and the relationship between them as enriching; by contrast, the Regulator sees her baby as a rival with the potential to uncover bad parts of herself, and views the relationship as essentially threatening (Raphael-Leff, 1995). These defenses are most potent in relation to the extreme Facilitator and extreme Regulator positions (Raphael-Leff, 1995). A more detailed presentation of the hypothesised journey from pregnancy to motherhood for the two orientations follows.

***Facilitator orientation.*** The Facilitator is believed to be primed for motherhood. Prone to idealisation, she views pregnancy as the beginning of her metamorphosis into adulthood and the realising of her true potential. Her self-perception is greatly enhanced by becoming a mother, so she relishes the feeling of a baby growing inside her and the observable changes to her physical shape (Raphael-Leff, 2009). Accordingly, she prepares for a complete and unreserved surrender to her infant, and becomes fully engaged with the process of taking on the maternal role. Her mental state resembles that of "primary maternal preoccupation" (Winnicott, 1956). That is, the mother experiences a state of heightened sensitivity towards her infant, activated during pregnancy. She prepares herself

so entirely for achieving her goal of meeting the infant's every need, that in the absence of a pregnancy, this state could be seen as a "psychological condition" (Winnicott, 1956, p. 61). According to Raphael-Leff (1995, 2009), while absorbed within this fantasy existence, the Facilitator guards against potentially damaging outside influences, as well as any unwelcome feelings of ambivalence or negativity toward her infant.

Through this process of absorption, the Facilitator is believed to establish a symbiotic connectedness with her infant *in utero*, based on identifying the unborn infant with her own idealised infant self. Hence, her infant is perceived as an imagined friend she already knows: social, and capable of communication. Birthing is anticipated as a mutual and natural transition for both. A natural childbirth experience without medical intervention is sought, followed by the establishment of breastfeeding, which will reinforce the exclusivity of her bond with the infant (Raphael-Leff, 1986, 1995).

In early motherhood, the Facilitator prioritises her infant's needs. She aims for complete synchronicity with her infant, responding immediately and sensitively (Raphael-Leff, 1986). She believes her infant, while vulnerable, is cognisant of what is best for him or her, can communicate these needs, and that she as mother will be the only one equipped to meet these needs. Rather than relying on a predetermined schedule for daily caregiving, she follows her infant's natural rhythms, believing that her infant knows best. Prompted by infant cues requiring her interpretation, she typically feeds her infant frequently and on demand and encourages a close physical proximity overnight (Raphael-Leff, 1983).

As this approach requires continual proximity and attunement to her infant, the subjugation of her own needs is required at all points across the transition to motherhood. Raphael-Leff articulates several sources of vulnerability associated with this orientation.

Circumstances that prevent a woman from achieving her idealised mothering goals, such as disappointment regarding unmet natural birthing plans, the inability to establish breastfeeding, or an earlier than desired return to work, can act as precipitants to distress (Raphael-Leff, 1986, 2009). Furthermore, the Facilitator can fall victim to subservience. Since she struggles to tolerate any negative feelings toward her baby which might jeopardise her idealised view of the dyadic relationship, the unrelenting subjugation of her own needs may lead to unmanageable resentment. As the infant grows, the need for him or her to differentiate and separate can create further challenges for the Facilitator. For the optimal outcome, the Facilitator needs a high level of support from her partner or from her own mother who can nurture her and allow her to maintain the exclusive care of her infant (Raphael-Leff, 1986).

***Regulator orientation.*** In contrast, the Regulator does not wish to be defined by motherhood and protects her well-established adult identity (Raphael-Leff, 2009). She continues to work and function as she would if she were not pregnant, and steers clear of maternity wear and other symbols of ensuing motherhood for as long as practical. This approach guards against any threat to her hard-earned status as an independent adult, promotes self-reliance and allows her to resist becoming absorbed in thoughts or fantasies of her infant (Raphael-Leff, 1986, 2009). Paradoxically however, the effort required to maintain this defensive position means that she also becomes preoccupied with motherhood but in a negative way, which Raphael-Leff termed “primary maternal persecution”. This is essentially the theoretical opposite of Winnicott’s (1956) primary maternal preoccupation.

At worst, her infant is experienced as an intruder, a “parasite” (Raphael-Leff, 2009, p. 90) capable of depleting her resources and threatening to divulge the unacceptable parts of

herself that she has successfully masked in adulthood (Raphael-Leff, 1986). In contrast to the Facilitator, the infant is viewed as an asocial stranger for whom meaningful communication is not yet possible and whose dependence she will tolerate for only a finite period of time. Thus, the Regulator approaches the birth with trepidation and welcomes medical intervention including analgesia to minimise pain and maximise control (Raphael-Leff, 1986, 2009). After the birth, she typically experiences exhaustion and plans for the shared care of her baby to promote rest and recuperation (Raphael-Leff, 1995).

In the early postpartum months, the Regulator devises a schedule for infant care to fast track a return to normality, to negate the need for what she sees as ambiguous deciphering of incoherent baby noise, and (likely without conscious awareness) she maintains an emotional distance from her infant (Raphael-Leff, 2009). Her strategy is to meet her baby's needs within a regular daily routine with little or no flexibility (Raphael-Leff, 1986). Infant feeding is at set times, allowing her to schedule other aspects of her life and to fulfill other roles. She believes that mother knows best and prefers caregiving methods that enhance socialisation and learned communication skills, while encouraging independence in her infant. Strategies that develop her infant's capacity to self-soothe, including separate sleeping arrangements, are favoured (Raphael-Leff, 1983, 2009). Based on a belief that her infant cannot distinguish among caregivers, her mothering role is seen as merely a series of successive caregiving tasks for which she has no reservations in employing alternate carers (Raphael-Leff, 1986, 2009).

The Regulator's well-being during the transition to motherhood, therefore, depends on her ability to pursue other interests and continue to grow within other adult roles and endeavours. If her partner is unable or unwilling to share babycare and if no alternate care

can be arranged, the Regulator will suffer if forced into full-time mothering, where she must exist solely in the domestic realm (Raphael-Leff, 2009). Any circumstances or parenting practices requiring enforced and prolonged togetherness, such as breastfeeding on demand, can intensify her discontent (Raphael-Leff, 1986). In addition, if her infant does not adjust easily to a predetermined schedule, the Regulator mother's feelings of competence can erode.

In summary, the theory of maternal orientation seeks to explain different underlying intrapsychic processes that drive the Facilitator and Regulator orientations. Central to the theory is the notion that fantasies and defenses influence a mother's capacity to relate to an infant and to engage in the mothering role, which in turn affects her caregiving preferences. Adopting parenting practices complementary to her orientation allows her to shape her desired mother-infant relationship by managing the level of intimacy. According to Raphael-Leff (2009), both extreme Facilitator and extreme Regulator positions carry the increased risk of pathological adjustment.

In practice, however, most women are purported to fall somewhere between the extreme Facilitator and Regulator endpoints (Raphael-Leff, 1983). An intermediary position, the "Reciprocator" orientation, was introduced in later publications (e.g., Raphael-Leff, 1995, 2009), to accommodate those with a combination of more moderate Facilitator and Regulator viewpoints.

***Reciprocator orientation.*** The Reciprocator is considered more psychologically robust, prepared for both positive and negative conditions and the uncertainty of the external world (Raphael-Leff, 2009). In addition, Raphael-Leff (1995) proposed that the Reciprocator holds a more healthy ambivalence towards the mothering role and her infant

compared with the idealisation of the Facilitator and the persecutory stance of the Regulator, respectively. Based on Winnicott's (1949) view that there is an unavoidable mix of love and hate in all interpersonal relationships, Raphael-Leff (1995) proposed that a woman who holds a Reciprocator position is well-equipped to accept a healthy ambivalence toward her baby and manage other internal contradictions. The Reciprocator therefore may resemble Winnicott's "good-enough mother" (Winnicott, 1960). She connects with her baby *in utero* as a unique individual, rather than as a fantasy baby as in the case of the Facilitator, or a parasitic being in the case of the Regulator, and she hopes for a relaxed birth, while at the same time being prepared for the unexpected. Holding steadfast to neither extreme, the Reciprocator is believed to negotiate between her own needs, that of her infant and other family members. The challenge lays in keeping those multiple needs in mind (Raphael-Leff, 1995).

***Conflicted orientation***. A fourth orientation, Conflicted Individuals, initially named the Bipolar group (Scher & Blumberg, 1992), was added to the model to account for those who simultaneously held extreme Facilitator and extreme Regulator viewpoints. The Conflicted group is less well-defined in the literature. It is as yet unclear whether this group represents those who are uncertain of their approach, or those with an underlying psychopathology. Furthermore, there is no reliable measure to assess the Reciprocator and Conflicted orientations, specifically. For the purposes of the current thesis, investigations focus on the Facilitator and Regulator orientations as these embody the conceptual framework of the theory and these more developed theoretical profiles invite empirical verification. Most certainly, the intuitive appeal of the theory lies in the parsimonious differentiation of these two profiles. Having said that, however, this research takes a

dimensional rather than categorical approach. That is, maternal orientation is examined along a spectrum of possible approaches rather than discrete categories of orientation that classify women as occupying one position or another. This methodology will be discussed in more detail in Chapter 2 Method.

In summary, maternal orientation theory describes the experience of mothering while taking into account the social context and developments in scientific and psychological inquiry, previously outlined. The psychoanalytic origins of maternal orientation theory are clear, and often explicit. However, there are also distinct parallels between maternal orientation theory and attachment theory, as both evolved from psychoanalytic underpinnings within the object relations tradition (Slade, 2000).

**Attachment Theory**

John Bowlby, a British psychoanalyst proposed a theory of attachment informed by object-relations theory and Charles Darwin's advances in biological science (e.g., Bowlby 1951, 1969, 1973, 1980; Simpson & Belsky, 2008). Attachment theory supported the swing at that time in popular opinion toward more baby-focused parenting. Rather than deliberating on a definition of optimal mothering, Bowlby founded his theory on the effects of neglectful or absent mothering (Karen, 1998).

In the early 1900s, many babies who were placed in public institutions and foundling homes around the world, were developmentally delayed, psychologically disturbed, or died (Barnard & Solchany, 2002; Butterworth, 2005). Adequate feeding, hygienic conditions and access to health care were not enough to sustain a normal course of development (Spitz, 1946). It became clear that physical caregiving was necessary, but not sufficient, to promote properly developed infants. Over time, many researchers were coming to the same

conclusion: infants need the opportunity to bond emotionally with their mothers or a mother substitute (Dennis, 1973; Freud & Burlinghame, 1944; Provence & Lipton, 1962).

Since then, the emotional aspects of mothering have come to the fore. Bowlby emphasised the importance of early relationships (in particular the mother-infant relationship) for the social and emotional development of the infant, seeing these bonds as the prototype for all future significant relationships. He stated "the infant and young child should experience a warm, intimate and continuous relationship with his mother (or permanent mother substitute) in which both find satisfaction and enjoyment" (Bowlby, 1951, p. 13). A nurturing maternal relationship can therefore offer a "secure base" (Bowlby, 1973, p. 359) from which to operate and confidently explore the world in infancy, and prosper in relationships across the life span.

Bowlby believed that infants are biologically predisposed to bond with those who care for them, and when this care is unpredictable or unavailable, the infant will develop ways of adapting to their caregiver, potentially distorting their own sense of self and reducing their own capacity for regulating affect (Slade, 2000). Thus psychological defenses are believed to emerge in an attempt to regulate emotion in response to an unavailable caregiver or suboptimal care. In parallel, internal working models (incorporating these defenses) develop and become assimilated by an infant as a result of repeated experiences with the caregiver (Bowlby, 1951, 1969, 1973, 1980). To Bowlby, early experiences mattered, and the underlying organisation of the attachment system was believed to be enduring.

After initial heavy critique, including rejection by renowned British psychoanalysts, attachment theory has become recognised as the most prominent theoretical model for understanding the dynamics of interactions in significant relationships (Cassidy & Shaver,

2008; Karen, 1998), and in recent times a large body of empirical research has supported its fundamental premises. The empirical work was made possible by the groundbreaking work of an American psychologist, Mary Ainsworth.

Ainsworth, Blehar, Waters, and Wall (1978) developed a procedure that has become the gold standard for classifying attachment behaviour for infants of 12–18 months of age. The Strange Situation Procedure is a laboratory paradigm that consists of eight 3-minute episodes in which an infant's behaviour is classified in an unfamiliar setting. The design of the Strange Situation Procedure provides the opportunity for infant behaviour to be examined in response to separations from and reunion with the mother, with a female stranger either present or absent. These patterns of behaviour were regarded as key indicators of infant attachment security, and were believed to capture emotion regulation strategies activated by the attachment system with respect to the caregiver. Ainsworth et al. (1978) found that infants generally exhibited one of three different patterns of behaviour and classified these as: Type A = insecure-avoidant, Type B = secure or Type C = insecure-anxious/ambivalent or resistant. Infants with an insecure-avoidant attachment (Type A) appeared impervious to the stranger's entrance into the room, and displayed little distress at separation from their mother and indifference on her return. In contrast, infants who displayed securely attached behaviour (Type B) were very distressed when separated from their mother, and showed intense delight on reunion. Those who were insecure anxious/ambivalent (or resistant, Type C) were characterised by clinging behaviour, becoming very upset when separated from their mothers, and remaining inconsolable on reunion. In contrast to insecurely attached infants, secure infants demonstrated what Bowlby considered to be evolutionarily adaptive behaviours. In the absence of threat, the infant uses the

mother as a base from which to explore the environment, and when distressed, the infant seeks safe haven with the mother for comfort and reassurance.

Home observation studies were able to link these attachment patterns of behaviour in infants who were previously classified as Type A, B or C, to their parents' responsiveness to their emotional cues and also to their parents' retrospective accounts of childrearing experiences (Bretherton & Waters, 1985). This research identified and operationalised individual differences in caregiver responsiveness, and how these related to infant defensive strategies when their attachment system was activated. This work also highlighted the intergenerational effect of attachment working models, thus paving the way for future research into adult attachment representations.

Mary Main and colleagues extended attachment theory by mapping the defensive positions of adults in the context of close relationships, onto those previously established for infants. Main and colleagues developed the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985; Main & Goldwyn, 1985, unpublished manuscript), a structured interview to assess internal working models of attachment, and in particular, the way in which individuals conceptualised their relationships in childhood. This research revealed, through analysis of individual differences in patterns of discourse about early caretaking, that defensive strategies used for emotion regulation in infants can also be identified in adults, namely: dismissing (avoidant), secure-autonomous, or preoccupied (anxious/ambivalent) (Crowell, Fraley, & Shaver, 2008; Hesse, 2008). The pattern of discourse is believed to represent the individual's current state of mind in relation to early childhood caretaking experiences.

Following the development of the Adult Attachment Interview, multiple options for self-administered measures to assess adult attachment representations have emerged. These instruments yield "adult attachment styles", and are conscious representations of typical ways of feeling and responding in the context of intimate (often romantic) relationships. A 3-category measure was first created (Hazan & Shaver, 1987) with categories analogous to those used to classify attachment behaviour in infants. Since then numerous measures have been published to assess attachment styles using a dimensional approach. Two orthogonal dimensions, anxiety and avoidance, (similar to the patterns identified in infancy and in the Adult Attachment Interview) have most commonly emerged as the most robust indices to conceptualise insecure adult attachment styles (e.g., Feeney, Hohaus, Noller, & Alexander, 2001; Fraley, Waller & Brennan, 2000). The dimensional approach has retained popularity over many years of research, as evidenced by the hundreds of studies that have measured adult attachment styles using this method (Mikulincer & Shaver, 2008).

**Parallels between Maternal Orientation and Attachment Theory**

Maternal orientation theory and attachment theory have common foundations in psychoanalytic theory and both propose that the quality of early caretaking experiences influences functioning in adulthood. In particular both theories draw on the notion of psychological defenses in relation to the quality of early care and ways in which these are represented in adulthood.

Maternal orientation theory explicitly acknowledges that a mother may possess unconscious defenses in reaction to her own unmet needs during infancy and that these processes in turn influence her own mothering style (Raphael-Leff, 1983, 2009). For both theories, defenses serve to protect the individual from potential harm by controlling the level

of intimacy in relationships and demarcating the rules of engagement. Internal working models provide the framework in which to operate in response to these defensive positions and may influence the way a woman later manages her expectations and mother-infant interactions with her own baby (Raphael-Leff, 2009).

Despite these similarities, the theories use somewhat different terminology. Whereas maternal orientation theory, (Raphael-Leff, 1986), takes a psychoanalytic approach and explains intrapsychic defenses, unconscious "phantasies" and projective identifications in relation to the infant and the mothering role, Bowlby (1980) conceptualised "defensive exclusion" in terms of two different types of information processing: deactivation and cognitive disconnection (George & Solomon, 1999; Priel & Besser, 2001). Deactivation, a similar process to repression, was defined as the act of sorting and excluding information from conscious awareness, resulting in emotional detachment. Cognitive disconnection, likened to splitting, was defined as a process of separating emotion from a situation or the person eliciting it, so that more than one view of the situation or individual could co-exist and be kept separate from other views. The tenets of attachment theory therefore are more focused on the cognitive domain than those hypothesised in maternal orientation theory. Nevertheless, both approaches assume that processing occurs outside of conscious awareness and that the influence on relationship functioning, particularly early caregiving, is pervasive.

Furthermore, the adult attachment representations described by Main and colleagues, can be compared with the Facilitator and Regulator profiles. The dismissing state of mind is typified by deactivation of emotion, enabling the mother to keep the infant at a distance in attachment activating situations. Similarly, the Regulator position is characterised

by defenses that move attentional bias away from emotional content to a series of regimented caregiving practices, minimising the need for a close intimate mother-infant relationship. Both the dismissing type and the Regulator orientation would then be plausibly characteristic of an avoidant attachment style.

The preoccupied state of mind, on the other hand, characterised an attentional bias toward emotional cues and fear of rejection and anger, aligns somewhat, but not completely, with the Facilitator orientation. Aspects of the Facilitator orientation (infant focus, commitment to minimising infant distress) are analogous with the secure-autonomous state of mind and also with sensitive, responsive and infant-focused babycare, believed to promote a securely attached infant (Ainsworth et al., 1978; Bowlby, 1951). Nonetheless, a more extreme Facilitator orientation characterised by an intense focus on the infant, with expectations of unwavering maternal devotion, hypervigilance and an uninterrupted maternal presence clearly shares features with the preoccupied state of mind and anxiety about attachment.

Both theories emphasise the ongoing impact of early experiences via internal working models that are never fully relinquished, but also acknowledge some movement in these mental representations over time. Attachment theory proposes that significant affectional bonds formed in adulthood, may help to modify internal working models (Bowlby, 1979). Similarly, maternal orientation theory accepts that circumstances and psychosocial experiences including the act of raising a first infant can alter a woman's standpoint on parenting with subsequent children (Raphael-Leff, 1985a).

Complementary to the attachment system, George and Solomon (1999) described a biologically driven caregiving system that develops as adults mature and approach

parenthood. Postnatally, the caregiving system is activated in conjunction with the infant's own attachment system. Both systems are triggered in the presence of threat, the infant compelled to seek comfort and the mother to provide it. Mothers are therefore believed to possess a drive to nurture, but like maternal orientation theory, individual differences in mental and emotional resources to do so are also recognised. Maternal orientation theory distinguishes mothers in terms of their capacity for caregiving and their emotional connectedness. However, Raphael-Leff takes this to another level, also detailing preferred methods of caretaking including approaches to infant feeding (Raphael-Leff, 1983), a preference (or not) for routinised care, and the anticipated flow on to mother-infant sleeping arrangements and infant settling practices (Raphael-Leff, 1985b).

Maternal orientation theory and attachment theory differ in the extent to which they are empirically supported. Although the theoretical basis of maternal orientation theory has been extensively described, empirical studies to underpin its validity have been limited until recently. Excluding Raphael-Leff's theoretical expositions and small-scales studies, only eight empirical studies by independent researchers were found from a literature search of the term, 'maternal orientation'. The findings from those papers are presented in Appendix A. Among those studies, translating the concept into a valid measurable construct has proved challenging and there has been little consensus regarding the best approach to measurement. Three different questionnaire tools have been developed to gauge maternal orientation, and the nature of the relationship among these measures remains unexplored. The studies also vary in the extent to which they control for extraneous variables when examining relationships with other theoretically associated concepts, and whether maternal orientation is measured prenatally or postnatally. In the context of a review of this existing

empirical work, the next section of this introduction presents the four studies that were conducted for the current thesis.

**Facilitators and Regulators: Psychometric Properties of Maternal Orientation Measures in Pregnancy (Chapter 3)**

Three separate self-report measures of maternal orientation have been used in the published literature: the Facilitator Regulator Questionnaire (FRQ; Raphael-Leff, 1985, 2009), the Antenatal Maternal Orientation Measure (AMOM; Sharp & Bramwell, 2004), and the Facilitator and Regulator Scales from the Placental Paradigm Questionnaire (PPQ; Raphael-Leff, 2009; van Bussel, 2009). Whereas the FRQ can be used both in pregnancy and postpartum with wording modifications provided by the author (Raphael-Leff, 2009), the AMOM and the PPQ were designed exclusively for use in pregnancy. All three questionnaires are grounded in theory, with content defined predominantly by distinctions between the Facilitator and Regulator orientations, but they differ in focus.

The FRQ and the AMOM both assess preferred maternal caregiving style, in particular a woman's preference for, or rejection of, structured babycare routines and feeding schedules. These questionnaires also have in common items that assess maternal views of infant capabilities for communication and sociability. Compared with the FRQ, the AMOM is a more comprehensive measure with questions also addressing expectations of life as a parent, and additional and varied maternal cognitions about the infant. The PPQ Facilitator and Regulator subscales, on the other hand, have quite a different focus and aim to uncover the deeper psychological processes underlying a woman's feelings about being pregnant.

Empirical research is emerging in support of maternal orientation theory. However, it is difficult to compare results across studies due to the multiple ways that maternal

orientation has been measured. The three maternal orientation measures have been used interchangeably in the published literature, necessitating cautious interpretation when generalising across studies. All published studies to date have used only one of these questionnaires to assess maternal orientation, and in the case of the FRQ, there has been several different forms.

The FRQ first appeared as a 3-item scale to measure postnatal maternal orientation (Raphael-Leff, 1985b) derived from extensive clinical experience and small-scale empirical investigation. Items related to (1) the nature of the daily caregiving routine, (2) feeding schedules and (3) the mother's perception of her infant's sociability. The 3-item FRQ (postnatal form) was used in a series of three studies involving 81 Israeli mothers and their infants (Scher & Blumberg, 1992, 1999; Scher, 2001). In the first, the internal consistency of the 3-item FRQ was found to be low (Cronbach's alpha = .21; Scher & Blumberg, 1992), and a further issue was raised. Those who were middle scorers comprised two separate groups, Reciprocators and Conflicted individuals (which Scher and Blumberg at the time termed the "bipolar" group). Scher and Blumberg argued that the Conflicted individuals did not belong along a spectrum of maternal orientations that assumes a gradual transition from a Facilitator to a Regulator orientation. Furthermore, they reported that the item concerning the woman's perception of her infant's sociability appeared unrelated to the other two items that measured caregiving preferences. For two of these three studies (Scher & Blumberg 1992, 1999), the sociability item was removed from the scale all together, leaving only two items to classify maternal orientation tendencies. Nevertheless, some interesting findings were derived from these studies that supported maternal orientation theory and were in

accordance with Raphael-Leff's small-scale empirical studies when formulating her theory (Raphael-Leff, 1985a, 1985b).

Scher (1992) found that the Regulator orientation was associated with first-time mothering (Scher & Blumberg, 1992) replicating preliminary findings of Raphael-Leff (1985b). Mothers with their firstborns tended to have a more structured approach to caregiving. Scher and Blumberg (1999) subsequently found that primiparous Facilitator mothers reported that their babies woke more often in the night when compared with primiparous Regulators. Further, two seemingly contradictory findings were explained in relation to attachment theory. Women from either a Facilitator or a Regulator orientation reported more maternal separation anxiety at sleep times when compared with middle-scorers (Scher & Blumberg, 1999), suggesting that both these orientations could be associated with insecure adult attachment styles. In the third study, however, Scher (2001) defined maternal orientation using all three items on the FRQ and found that mothers classified as Facilitators at 6-months postpartum were more likely than those classified as Regulators to have securely attached one-year-old infants as measured by the Strange Situation Procedure. These preliminary findings invite further study to replicate associations with parity, and to clarify the relationship between maternal orientation, adult attachment styles and mother-child attachment.

More recently, a 5-item FRQ scale has been published in postnatal form, and it can be used in pregnancy with wording modifications provided by the author (Raphael-Leff, 2009). The extended scale includes several modifications to the 3-item scale. While the sociability item is retained, two new items have been added to gauge a woman's perception of her infant's ability to communicate with her, and to interact with her. Raphael-Leff (2009)

provides some guidelines to classify women's responses into specific categories of maternal orientation (i.e., Facilitator, Regulator, Reciprocator, Conflicted), but Reciprocators cannot easily be distinguished from the Conflicted individuals. Furthermore, when using the FRQ as a dimensional scale, these two groups still constitute a combined group of middle scorers, raising a methodological dilemma for the researcher. This issue is further discussed in Chapter 2 Method. To date, no studies have been published with the 5-item FRQ, and no information on the reliability or validity of the scale has been reported. The 5-item FRQ in postnatal form is presented in Appendix B.

A significant advance in measurement of the construct was provided by Sharp and Bramwell (2004). Their more comprehensive questionnaire for use in pregnancy, the Antenatal Maternal Orientation Measure (AMOM), remains the only maternal orientation measure that covers multiple elements of maternal orientation theory including approaches to caregiving, as well as underlying emotional aspects, in one tool. Item content spans not only planned caregiving practices and perceptions of infant capabilities, but also maternal cognitions about labour and birth, and expectations of life with the infant in the early postpartum period. Sharp and Bramwell found that women's responses to all AMOM items, except for those related to labour and birth, tended to place them within one of three groupings roughly in line with Facilitator, Regulator and Reciprocator profiles using cluster analysis. This study assessed relations between maternal orientation and mood across the transition to motherhood with a large sample of primiparous English women ($N$ = 205). Regulators were found to be at increased risk of postnatal depression at 6–8 weeks postpartum, even after controlling for antenatal symptoms. These findings have not yet been replicated, however, as no further published research to date has utilised the AMOM to

classify maternal orientation. The AMOM will be further discussed in Chapter 2 Method including some modifications. The final measure, the AMOM-R, is presented in Appendix C.

The third measure to assess maternal orientation, the PPQ Facilitator and Regulator subscales focuses on the mother's feelings about her body and her infant during pregnancy, and presents a very different item content to both the FRQ and the AMOM. The Facilitator and Regulator orientations are assessed independently with two separate 7-item subscales (Raphael-Leff, 2009). Van Bussel (2009) subsequently reported a body of work examining maternal orientation (as assessed by the PPQ subscales) in relation to maternal depression, anxiety and experiences of childbirth. Although van Bussel's unpublished doctoral thesis (2009) includes some exploration of maternal orientation categories, published works include only studies classifying maternal orientation as a dimensional construct (van Bussel, Spitz, & Demyttenaere, 2009a, 2009b, 2010a).

Consistent with findings reported by Sharp and Bramwell (2004), albeit with a different pregnancy measure, van Bussel and colleagues (2009a) found that more Regulator tendencies predicted postnatal depressive symptoms even after antenatal depressive symptoms were taken into account. In relation to anxiety, more Regulator tendencies were associated with anxiety in pregnancy, whereas Facilitator tendencies were associated with maternal separation anxiety postpartum (van Bussel et al., 2009b). Furthermore, Facilitator tendencies among first-time expectant mothers predicted lower feelings of fulfilment when experiences of birthing involved medical intervention (van Bussel et al., 2010a). Those with Facilitator tendencies were also more likely to have planned their pregnancies. These findings were all in accordance with theory (Raphael-Leff 1983, 1985a, 1985b, 1986), particularly the proposal that Facilitators and Regulators view experiences across the

perinatal period differently and their reactions to circumstance will be distinctive. However, in contrast to previous findings regarding parity that found a Regulator orientation was associated with first-time mothering (Raphael-Leff, 1985b; Scher & Blumberg, 1992), van Bussel (2009) reported that first-time expectant mothers were more likely to endorse a Facilitator orientation.

Van Bussel (2009) made several recommendations in regard to these subscales, including refinement from two 7-item to two 5-item scales, leading to an improved internal consistency of the measure. The current thesis utilises this modified format. The measure is explained in more detail in Chapter 2 Method and the two 5-item subscales are presented in Appendix D.

The first aim of this thesis is to compare the three above-mentioned maternal orientation measures and to establish the psychometric properties of each. Facilitators and Regulators: Psychometric Properties of Maternal Orientation Measures in Pregnancy (Chapter 3) presents results of a study addressing this aim. Maternal orientation has been classified using a dimensional approach in the current thesis to be in accordance with the work of van Bussel et al. (2009a, 2009b, 2010a) and also consistent with recent research in the field of attachment theory (Mikulincer & Shaver, 2008). A dimensional approach is used to reduce any possibility of misclassification of orientation and to more accurately represent women's standpoints across the spectrum of possible approaches from Facilitator to Regulator orientations.

Relationships among the three antenatal maternal orientation measures are explored, and separately with other theoretically associated factors. This study provides the opportunity to examine previously equivocal findings in relation to parity, as well as other

pregnancy-related factors. As van Bussel (2009) found that a more Facilitator orientation was associated with planned pregnancy, and Raphael-Leff (1985b) found that those classified as Regulators returned to work earlier than Facilitators, relationships with planned pregnancy and antenatal paid work-status were included.

Furthermore, associations with the adult attachment dimensions of avoidance and anxiety are explored in the context of previous mixed findings (Scher & Blumberg, 1999; Scher, 2001). Owing to the shared theoretical background and commonalities between the two theories, findings may contribute to evidence of construct validity for the maternal orientation measures and maternal orientation theory more generally. It is expected that a more Regulator orientation, with a preference for scheduled caregiving, will be associated with a dismissing (avoidant) attachment style. Conversely, as the Facilitator orientation becomes more extreme, characterised by intense infant focused caregiving, associations are expected with attachment-related anxiety.

Given the strong focus in the theory of maternal orientation on caregiving preferences, this first study also explores associations with parenting cognitions more broadly. The theory would predict that the infant focus characteristic of a more Facilitator orientation may be accompanied by more flexible thinking regarding infant behaviour, conceptions of children and of the parenting role more generally. Sameroff and Feil (1985) proposed that parents mature across a series of development stages, namely: symbiotic, categorical, compensating, to perspectivistic. While acknowledging that a child could be raised well by a mother at any stage of her parenting development, they propose that the more complex perspectivistic approach allows for more forgiving and accepting cognitions about child behaviour, such that even behaviour that is experienced as challenging for the

parent to manage might be understood as meaningful and purposeful to the child. According to this view, a parent at the highest stage of development can recognise the child as a complex and separate individual, whose behaviour can be influenced by different environmental contexts, unrelated to the child's inherent nature. With this capacity, expectant mothers might be more capable of taking a flexible stance to infant care and be open to following their baby's lead. It is hypothesised, therefore, that a more Facilitator orientation will be associated with compensatory/perspectivistic thinking, whereas a more Regulator orientation will be associated with categorical and more simplistic conceptualisations about the child.

In summary, this first study aims to compare the psychometric properties of three maternal orientation measures in pregnancy: the 5-item FRQ (prenatal form), the AMOM-R, and the PPQ Facilitator and Regulator subscales. Reliability, exploring internal consistency, is examined. Construct validity is determined by comparisons with theoretically associated demographic and pregnancy-related variables, as well as relationships with comparable constructs (attachment style, parenting cognitions).

**Facilitators and Regulators: Infant Sleep Practices and Maternal Subjective Well-Being (Chapter 4)**

Maternal orientation theory makes clear predictions with regard to infant caregiving practices. Raphael-Leff (1983, 2009) specified a number of caregiving practices that tend to cluster around the Facilitator and Regulator poles. In relation to a Facilitator orientation, she proposed longer-term breastfeeding, mother-infant room sharing and active infant settling. In contrast, the Regulator orientation was associated with the early introduction of formula

milk, separate mother-infant sleeping arrangements and encouragement of infant self-soothing.

However, there is limited empirical validation of these propositions. Instead, the focus has been on either infant outcomes, such as infant night-waking (Scher & Blumberg, 1999) and infant attachment security (Scher, 2001), or maternal outcomes, including maternal depression and anxiety (Sharp & Bramwell, 2004; van Bussel et al., 2009a, 2009b) and childbirth experiences (van Bussel et al., 2010a). Only two studies have focused explicitly on caregiving practices. Sharp and Bramwell (2004) confirmed that the Facilitator orientation was associated with expectations for longer-term breastfeeding, whereas Scher and Blumberg (1999) investigated infant settling strategies (pacifier/bottle feeding vs. infant finger sucking), but found no associations with Facilitator or Regulator profiles.

The first aim of the second study is to test whether maternal orientation is associated with infant caregiving, in accordance with theory. As maternal orientation has largely been defined by the way in which infant feeding is managed, this second study examines associations with the maternal caregiving practices around infant sleep.

A second aim is to test Raphael-Leff's proposition that a woman's maternal orientation is associated with her psychological adjustment to mothering. Facilitators are believed to use the pregnancy as a rehearsal, enacting a deep symbiotic bond with their infant long before the birth. They are further believed to be primed to mother and see the role as stimulating and rewarding. Regulators, on the other hand, are proposed to resist bonding with the infant *in utero* and defend against the changes associated with becoming a mother. They are, therefore, theorised to be more likely to perceive the mothering role as depleting and boring (Raphael-Leff, 1983, 1995, 2009), a proposition that has some empirical

support as discussed further below. However, Raphael-Leff qualified this position by explaining that Facilitators and Regulators might well be equally satisfied in the mothering role if they were supported to mother the way they chose and if circumstances (e.g., need to return to paid work) were not in conflict with their preferred parenting practices (Raphael-Leff, 1985b). Furthermore, she specified different times of vulnerability across the perinatal period for both the Facilitators and Regulators.

Across studies, the Regulator orientation has been associated with lower self-esteem in the mothering role (Raphael-Leff, 1985b) and a higher risk of antenatal and postnatal depression (Sharp & Bramwell, 2004; van Bussel et al., 2009a) when compared with the Facilitator orientation. However, results regarding maternal anxiety appear more equivocal. Scher and Blumberg (1999) found that both Facilitators and Regulators were higher on separation anxiety when compared with Reciprocators. In contrast, van Bussel et al. (2009b) found that separation anxiety was common for those of a more Facilitator orientation, whereas pregnancy-related anxiety was specific to the Regulator orientation. As this previous research has focused predominantly on mood and anxiety, a broader index of adjustment to motherhood, maternal subjective well-being, is used to explore the psychological aspects of early motherhood.

When investigating these relationships, and indeed for the remaining studies conducted within this thesis, it is important to control for various demographic and contextual factors that could influence the outcome variables of interest. In this case, sleep practices may be related to other caregiving variables. As longer-term breastfeeding has been found to be associated more with the Facilitator orientation than the Regulator orientation (Raphael-Leff, 1985b; Sharp & Bramwell, 2004), it may be that infant feeding type

alone is responsible for certain sleep-related practices. For instance, breastfeeding mothers tend to keep their babies closer overnight, either through room sharing or co-sleeping (Ball, 2007; Blair, Heron, & Fleming, 2010; Goldberg & Keller, 2007). Reasons may include frequent feeding to maintain milk supply (Walker, 2011) and the faster digestion of breastmilk when compared with formula milk (Sadeh, Tikotzky, & Scher, 2010). Consequently, infant milk feeding type (with or without solid foods) is included as a possible confounding variable in examining associations between maternal orientation and caregiving practices.

Similarly, several other demographic variables are acknowledged to influence the context of caregiving. Controlling for these variables allows findings unique to the maternal orientation construct to be isolated. Parity and current work status are included, as they were in the first study, but not only due to previous findings associated with maternal orientation, but also because having more than one child and being in paid employment may influence caregiving practices. Cultural background (Črnčec, Matthey, & Nemeth, 2010; Sadeh et al., 2010), maternal education (Gudmundson, 2013), infant age (Scher et al., 1995), and infant prematurity at birth (Vandenberg & Hanson, 2013) have all been found to have some bearing on caregiving methods. Furthermore, older mothers and those who conceived with the use of Artificial Reproductive Technology might have more intense positive feelings about becoming mothers and this in turn may influence the way in which they care for their infants (Hammarberg et al., 2013). As a conservative approach was taken, infant gender was also included.

As this study uses the only available and as yet unvalidated measure of postnatal maternal orientation, a third aim is to examine psychometric properties for the 5-item FRQ (postnatal form).

The first two abovementioned studies (presented in Chapter 3 and 4) are exploratory studies involving concurrent relationships in pregnancy and the postpartum period respectively. These two studies aimed to inform research in two further prospective investigations (Chapters 5 and 6) from pregnancy to the early postpartum period.

**Facilitators and Regulators: Antenatal Maternal Orientation and Postnatal Parenting Practices (Chapter 5)**

Although Raphael-Leff (1986, 2009) does not view maternal orientation as a personality trait, she does propose that maternal orientations are largely stable from pregnancy to the birth of a subsequent child. However, there has been no empirical research published to substantiate this proposition. This study uses a longitudinal design to test the relationship between antenatal and postnatal maternal orientation, also providing another opportunity to compare the three measures of maternal orientation (AMOM-R, PPQ subscales, FRQ postnatal form), and their interrelationships across the perinatal period.

In addition, this prospective study explores in a different sample, the relationship between maternal orientation in pregnancy and postnatal maternal caregiving practices, in order to extend the cross-sectional work of the second study (Chapter 4). Practices related to both infant feeds and infant sleeps are examined at 6-months postpartum. The likelihood of breastfeeding exclusively is examined in the context of maternal orientation. Although maternal orientation is defined in part by scheduling of infant feeds rather than infant feeding type, Raphael-Leff (2009) identifies the early introduction of formula milk as characteristic of the Regulator orientation. Although the majority of mothers now initiate breastfeeding from birth in accordance with World Health Organization guidelines (92.3%; Australian Bureau of Statistics, 2011–12), fewer maintain exclusive breastfeeding to 6-

months postpartum (17.6%; Australian Bureau of Statistics, 2011–12). A woman's maternal orientation is expected to predict her persistence with breastfeeding.

In addition, as in the second study (Chapter 4), infant feeding type is considered as a possible confounding variable to infant sleep practices as well as similar demographic and contextual influences. Since this was a prospective study, the childbirth experience was also included. The Facilitator is believed to prefer a natural labour and birth and expects feelings of fulfilment, whereas the Regulator seeks a controlled birth with medical intervention aimed to reduce the distress associated with childbirth (Raphael-Leff, 1995; van Bussel et al., 2010a). Whether or not these birth plans are realised might have an impact on a mother's resolve for specific postnatal caregiving methods.

**Facilitators and Regulators: Predicting Maternal Depression Symptoms and Mothers' Subjective Attachment to Their Infants (Chapter 6)**

The final study in the thesis plans to extend the exploration of concurrent relations between maternal orientation and a woman's maternal experience postpartum (Chapter 4), by examining the relationship between maternal orientation in pregnancy and two different indices of maternal adjustment at 3-months postpartum: maternal symptoms of depression and maternal evaluations of attachment to the infant. This study, firstly, seeks to replicate findings of previous studies that have linked an antenatal Regulator orientation with depressive symptoms postpartum (AMOM, Sharp & Bramwell, 2004; PPQ subscales, van Bussel et al., 2009a), even when antenatal symptoms of depression are taken into account.

Secondly, this fourth study examines the prospective association between antenatal maternal orientation and postnatal feelings of attachment to the infant. Although no studies of maternal orientation have examined maternal feelings of attachment to the infant to date,

as noted earlier, research has examined relations with adult attachment styles and one study has prospectively investigated associations with attachment security in infants. In an unpublished study, van Bussel (2009) found that women with a more Regulator orientation (using the PPQ Regulator subscale with a focus on persecutory defenses) tended to endorse items associated with fearful and preoccupied attachment representations in the context of romantic relationships using the Dutch version of the Relationships Questionnaire (RQ; Bartholomew & Horowitz, 1991). In relation to mother-infant attachment, Scher (2001) found that women classified as Regulators at 6-months postpartum were more likely to have insecurely attached infants at 12 months of age when compared with Facilitators. A Regulator orientation, therefore, appears more linked with insecure adult and infant representations. In the current thesis, a somewhat different approach is taken. Relations between maternal orientation in pregnancy and mothers' subjective feelings of attachment to their 6-month-old infants are explored.

The attachment measure developed by Condon and Corkindale (1998) is used in this final study. The exploration of mothers' feelings of attachment needs to be distinguished from individual differences in attachment as conceptualised by Bowlby and Ainsworth, which focuses primarily on infant behaviour toward the caregiver during times of stress or separation, and the quality of maternal caregiving in response to infant attachment cues. Condon and Corkindale's approach investigates mother-infant attachment from the perspective of the mother and elucidates the maternal cognitive-affective structures that they hypothesise form the basis of mother-infant interactions. Rather than focusing on the dimensions of anxiety and avoidance, identified as orthogonal dimensions of attachment in intimate relationships (Brennan, Clark, & Shaver, 1998; Feeney, Hohaus, Noller, & Alexander,

2001), Condon's concept focuses on the perceived strength of the dyadic bond. Three additive factors are derived from this measure as outlined by Scopesi, Viterbori, Sponza, and Zucchinetti (2004): the mother's perceived quality of attachment to her infant, the degree of hostility felt toward the infant and the enjoyment experienced when interacting with the infant.

All relationships are tested while controlling for well-documented confounding variables related to depressive symptoms and self-reported mother-infant attachment. Given that the strongest predictor of postnatal depression is antenatal depression (Buist et al., 2006; Milgrom et al., 2008), antenatal depression is included when examining maternal orientation associations with postnatal depressive symptoms. Further, symptoms of depression have been found to influence the quality of mother-infant interaction (Murray, Cooper, & Hipwell, 2003; Poobalan et al., 2007) as well as the amount of pleasure felt by the mother as a result of being with her baby (Cornish et al., 2006). Therefore, for analyses examining postnatal maternal attachment to the infant, both antenatal and postnatal depressive symptoms are included in a theoretically derived model.

As the context of mothering can influence both maternal mood and felt attachment to the infant, the before-mentioned demographic and pregnancy-related factors, identified for previous studies in this thesis, will be examined for inclusion in the model, ultimately tested by path analysis.

**Summary of Research Aims**

This thesis addressed four research aims reporting data from three samples. The first two aims were addressed through two online surveys, one developed for pregnant women and the other for mothers in the early postpartum months (Chapter 3 and Chapter 4). Two further research aims were examined for a sample of women participating in a prospective study of adjustment during the transition to parenthood (Chapter 5 and Chapter 6). In all studies a large number of contextual and demographic variables are considered.

***Research aim 1.*** *Facilitators and Regulators: Psychometric Properties of Maternal Orientation Measures in Pregnancy (Chapter 3).* To explore the psychometric properties of three antenatal maternal orientation measures available in the published literature and to test a revised version of the Antenatal Maternal Orientation Measure (AMOM; Sharp & Bramwell, 2004). Relationships revealed will increase understanding of the Facilitator and Regulator profiles within an antenatal population. The identification of a psychometrically sound measure of maternal orientation will also be immediately useful to the larger research community.

***Research aim 2.*** *Facilitators and Regulators: Infant Sleep Practices and Maternal Subjective Well-Being (Chapter 4)*. To test concurrent relationships between postnatal maternal orientation, mothers' reported infant caregiving behaviours and maternal subjective well-being. The psychometric properties of the Facilitator Regulator Questionnaire (FRQ postnatal form; Raphael-Leff, 2009) are explored in the context of this investigation.

***Research aim 3.*** *Facilitators and Regulators: Antenatal Maternal Orientation and Postnatal Parenting Practices (Chapter 5).* The third study investigates, in a prospective sample, the stability of maternal orientation across the transition to motherhood as well as the relationships between maternal orientation in pregnancy and caregiving practices postpartum.

***Research aim 4.*** *Facilitators and Regulators: Predicting Maternal Depression Symptoms and Mothers' Subjective Attachment to Their Infants (Chapter 6).* The fourth study examines the relationship between maternal orientation in pregnancy and maternal adjustment postpartum. Both maternal depressive symptoms and maternal subjective feelings of attachment toward the infant are considered.

Findings related to each research aim are presented in the four papers detailed in this thesis. All papers have been formatted for consistency across chapters. The studies presented in Chapter 3 and 4 have been published in the *Journal for Reproductive and Infant Psychology* in 2011 and 2013, respectively. These papers appear in published form in Appendix I and J, whereas the studies detailed in Chapters 5 and 6 have both been submitted for publication to the *Australian Journal of Psychology* and the *Archives of Women's Mental Health*, respectively. An overview of the research is presented in Chapter 2 Method.

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# CHAPTER 2

# Method

# Method

## Overview of the Research Design

Four independent and related research studies are described in this thesis. There were both cross-sectional and longitudinal components: two exploratory studies examined women's experiences of pregnancy (Chapter 3) and early motherhood (Chapter 4) in isolation, and two additional prospective studies followed women from pregnancy through to the early months of motherhood (Chapters 5 and 6). A summary of the research design for each of the four studies is provided in Table 2.1.

## Participants

Three large samples of Australian women were recruited for the research presented in the current thesis: 230 pregnant women (Chapter 3), 274 mothers in the early postpartum period (Chapter 4), and 218 women from pregnancy to the early months postpartum (Chapters 5 and 6). Demographic characteristics for each of the groups are presented within the body of each research paper. In general, the women who participated were partnered, well-educated and spoke English as a first language.

## Procedure

All research described within this manuscript, involved voluntary participation and was approved by relevant ethics committees. For the research described in Chapters 3 and 4, the Macquarie University Human Research Ethics Committee provided ethics clearance (HE27NOV2009-D00209), see Appendix G. Data for these two studies were collected from December 2009 until April 2010. For the research detailed in Chapters 5 and 6, the Macquarie University Human Research Ethics Committee (5201000419) and the Northern Sydney Central Coast Area Hospital Service Human Research Ethics Committee (1002-041M)

granted approval, see Appendix H. Participants were recruited in July 2010 and data collection extended until January 2012.

As the first two studies (Chapters 3 and 4) were online surveys, participant contributions were accepted from women all around Australia. All aspects of the study could be completed remotely. Online survey completion allowed access to women from geographically diverse areas and to those who were likely only available outside of normal working hours. Participants for the remaining two studies (Chapters 5 and 6) were recruited in conjunction with a larger research project, the Perinatal Regulation and Mood Study (PRAMS), conducted by researchers within Macquarie University and University of New South Wales. The PRAMS project had a prospective design and accordingly required data collection at several points during pregnancy and postpartum. In addition to the online questionnaires, telephone and face-to-face interviews were conducted in Sydney. Consequently, the maternal experiences discussed in relation to these two studies were limited to women living in that city.

**Measures**

***Maternal Orientation Measures.*** Three measures of maternal orientation were compared in this thesis. As the first two research aims had a psychometric focus, all details of modifications to the measures are provided to allow for possible replication in future research. In the current thesis, maternal orientation was measured as a dimensional construct, focusing on tendencies toward, or away from, the Facilitator and Regulator orientations, rather than as distinct categories (e.g., Facilitator, Regulator, Reciprocator, Conflicted). The dimensional approach is in concordance with recently published research (e.g., van Bussel, Spitz, & Demyttenaere, 2009a, 2009b, 2010a), and prevents the possibility

of category misclassification, while providing the opportunity to examine more subtle differences across a spectrum of possible orientations (van Bussel, 2009). Although the focus was specific to the Facilitator and Regulator orientations, women tending toward a Reciprocator position were included, not as a separate category, but as a more moderate position relative to the Facilitator or Regulator extreme end points. Conflicted individuals were not the focus of the current thesis, and were removed from postnatal investigations with the Facilitator Regulator Questionnaire (FRQ postnatal form).

*Facilitator Regulator Questionnaire (FRQ prenatal form and postnatal form).* The Facilitator Regulator Questionnaire (FRQ postnatal form; Raphael-Leff, 2009) gauges a woman's maternal orientation with five items and one sub-item. Items assess (1) mothers' use of daily routines for infant care, (2a) views on infant feeding schedules, (2b) attitudes toward weaning (breastfeeding or formula feeding not specified), and maternal perceptions of infant capabilities regarding (3) communication, (4) socialisation and (5) interaction. Total scores range from –1 to 16, which give an indication of tendency toward (and away from) either of the Facilitator or Regulator extremes. Low scores reflect a Facilitator orientation and high scores a Regulator orientation. Although the original FRQ was found to be low in reliability ($\alpha$ = .21; Scher & Blumberg, 1992), no psychometric properties have yet been published for the 5-item scale.

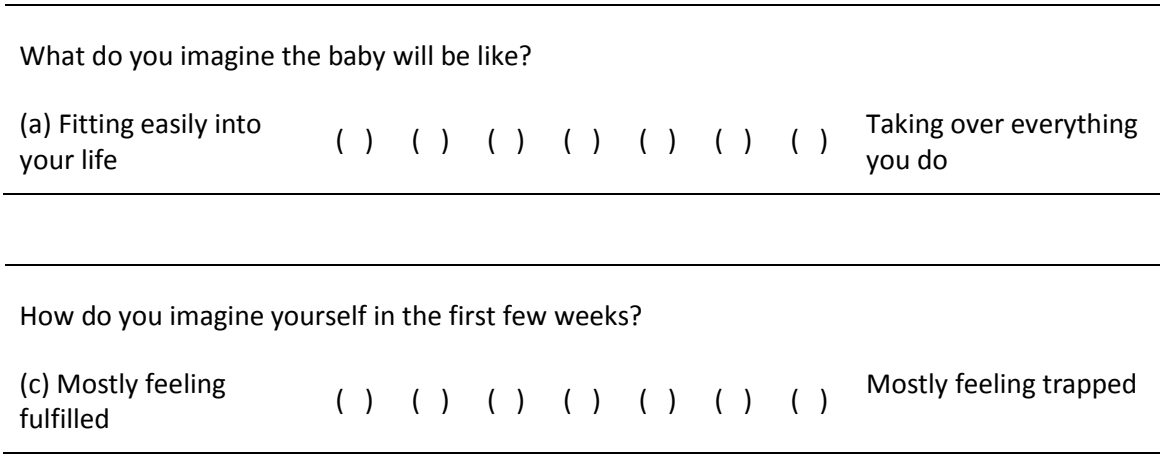
Raphael-Leff provided the wording modifications necessary for use in the prenatal period (J. Raphael-Leff, personal communication, December 21, 2009). Items were, for the most part, identical in both versions. In the prenatal form, questions related to intentions for infant care and expectations of the mother-infant relationship, rather than postnatal mothering practices and postnatal perception of the baby. Responses were examined in

pregnancy (FRQ prenatal form; Chapter 3) and in the early postnatal period (FRQ postnatal form; Chapter 4 and Chapter 5).

While Raphael-Leff (2009) provides some guidelines to classify women's responses into specific categories of maternal orientation (e.g., Facilitator, Regulator, Reciprocator, Conflicted), this thesis presents a dimensional approach (using the FRQ total score) for consistency across maternal orientation measures. This created an issue unique to the FRQ. Owing to there being only one FRQ scale, low scores are indicative of a Facilitator approach and high scores reflect a Regulator approach, but middle scores can reflect either moderate views relative to both the Facilitator and Regulator orientation (Reciprocators), or extreme views endorsing both the Facilitator and Regulator orientations at the same time (Conflicted individuals). Unlike the Reciprocators, Conflicted individuals cannot fit within a graduated spectrum of maternal orientation. Decisions made were specific to the study in which it was used.

Conflicted individuals were retained in prenatal investigations (Chapter 3), but were removed in later postnatal studies (Chapter 4 and Chapter 5). The inconsistency of this approach is acknowledged. Although not documented in the body of this thesis, after considering comments from reviewers from the *Journal of Reproductive and Infant Psychology* prior to publication, analyses were reconducted testing the study hypotheses with the Conflicted individuals included and removed from the data set. Due to few participants meeting the criteria as Conflicted, results were similar and the main conclusions were identical in all studies. The Conflicted position is not a focus in this thesis and warrants theoretical and empirical elaboration in future research, including the method of identification of Conflicted Individuals. The FRQ (postnatal form) is presented in Appendix B.

*Antenatal Maternal Orientation Measure (AMOM).* Sharp and Bramwell (2004) devised the comprehensive Antenatal Maternal Orientation Measure (AMOM): a 27-item questionnaire including five subscales. Each subscale assesses: (1) a woman's anticipated experience of labour and (2) birth, (3) her expectations of her baby, (4) her expected feelings about herself in the early postnatal weeks, and (5) her infant feeding plans. Each item presents a Facilitator and a Regulator statement as theoretically opposed pairs, separated by a 7-point response set along which opinions could be gauged. As an example, two items from the AMOM are replicated below (see Figure 2.1).



What do you imagine the baby will be like?

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (a) Fitting easily into your life | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | Taking over everything you do |

How do you imagine yourself in the first few weeks?

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (c) Mostly feeling fulfilled | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | Mostly feeling trapped |

*Figure 2.1*

Example of the original AMOM item format

Two modifications were made to the AMOM prior to use, after seeking the author's permission (H. M. Sharp, personal communication, December 19, 2009). In the current AMOM format, choosing a tendency toward one orientation necessitates choosing less of a

tendency toward the other. However, some women may be inclined to endorse both statements simultaneously. The AMOM does not allow these theoretically contradictory viewpoints to be captured. Certainly, the statements presented in each of the items above are not necessarily mutually exclusive experiences. Separating each of these paired statements into two separate items is a simple way of allowing Facilitator and Regulator tendencies to be gauged independently while maintaining the integrity of the item wording. To demonstrate the modification of format, the two example items are transformed into four separate items (see Figure 2.2). Secondly, only items from subscales 3, 4 and 5 were used. These three subscales were found to best discriminate among orientations in previous research, even though results related to feeding plans were not always entirely consistent with theory (Sharp & Bramwell, 2004).

Once formatting was altered, all Facilitator items and Regulator items from the three AMOM subscales were then combined to produce two distinct subscales: a Facilitator and a Regulator subscale. Internal consistency was assessed, and only items that contributed to an improved Cronbach's alpha value for each subscale were retained. No reverse coding of individual items is required. Higher scores on the AMOM-R Facilitator and AMOM-R Regulator subscales indicate more of a tendency toward a Facilitator or Regulator orientation, respectively.

The Antenatal Maternal Orientation Measure-Revised (AMOM-R) is presented in Appendix C and appears in Chapters 3, 5 and 6. In Chapter 3, the AMOM-R was designed with a 6-point response set, and in Chapters 5 and 6, a 7-point response set incorporated a neutral response option. Although a 6-point response set was initially adopted to force participant choice between Facilitator and Regulator positions, participant feedback

suggested that a neutral response option might allow respondents to express their views more fully. Similarly, Preston and Coleman (2000) found that 6-point and 7-point scales performed equally well on several indices of reliability, validity and discriminant power, but respondent preference was higher for the 7-point scale. Consequently, a 7-point scale was adopted for Chapter 5 and 6.

What do you imagine the baby will be like?

| | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree |
|---|---|---|---|---|---|---|
| (a) Fitting easily into your life | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| (b) Taking over everything you do | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |

How do you imagine yourself in the first few weeks?

| | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree |
|---|---|---|---|---|---|---|
| (c) Mostly feeling fulfilled | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| (d) Mostly feeling trapped | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |

*Figure 2.2*

Example of modified AMOM-R item format

*Placental Paradigm Questionnaire (PPQ) Facilitator and Regulator Subscales.* The Placental Paradigm Questionnaire (PPQ) is a 28-item tool used to screen for prenatal

psychological distress and disturbance. Items relate specifically to a mother's bond *in utero* with her baby. Two subscales, which aim to gauge Facilitator and Regulator orientations, are embedded in the larger PPQ. Facilitator tendencies are determined by the presence of idealisation in relation to the infant and motherhood (e.g., "I feel more of a woman now that I am pregnant"), whereas Regulator tendencies are gauged by the presence of persecutory thinking (e.g., "I feel as though the baby might damage me inside"). Two separate scales allow for independent assessment of the Facilitator and Regulator orientations.

Several modifications to the PPQ Facilitator and Regulator subscales were made as recommended by van Bussel (2009). Van Bussel reduced the two Facilitator and Regulator subscales from seven down to five items, which he reported enhanced the internal consistency of both scales. Cronbach's alpha was documented to be $\alpha$ = .75 and .59 for the 5-item Facilitator subscale and 5-item Regulator subscales, respectively. The response set was extended from a 4-point to a 7-point scale as displayed in Figure 2.3, with the aim to increase sensitivity in detecting differences in maternal orientation.

| | Strongly disagree | … | Disagree | … | Agree | … | Strongly Agree |
|---|---|---|---|---|---|---|---|
| (10) Pregnancy makes me feel special | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |

*Figure 2.3*

Example of the extended response set used with the PPQ Facilitator and Regulator subscales

To allow for direct comparison with van Bussel's previous work, each response option was scored in increments of .5, (i.e., 0, .5, 1, 1.5, 2, 2.5, 3), ranging from strongly disagree (0) to strongly agree (3), and items on the PPQ Facilitator subscales were reverse-coded. High scores on each subscale reflected a higher Facilitator or a higher Regulator orientation, respectively, consistent with the AMOM-R subscales. As the PPQ subscales are specific for use in the antenatal period, they are appear in Chapter 3, 5 and 6 to assess maternal orientation in pregnancy. The PPQ Facilitator and Regulator subscales, as refined by van Bussel (2009) are presented in Appendix D.

***Psychosocial Correlates***

*Attachment Style Questionnaire (ASQ).* The Attachment Style Questionnaire (Feeney, Hohaus, Noller, & Alexander, 2001) is a 40-item instrument that assesses attachment style in adulthood. Two dimensions are of particular interest in the current thesis: discomfort with closeness (16 items; e.g., "Doing your best is more important than getting on with others") and anxiety over relationships (13 items; e.g., "It's important to me that other people like me"). Respondents are required to consider how they feel and act in relation to a range of social situations, including but not limited to intimate partnerships. Participant answers are gauged along a 6-point response set from *strongly disagree* to *strongly agree*. Higher total scores on each subscale indicated more discomfort with closeness or more anxiety over relationships, respectively. As this measure was formulated with an Australian sample, data from this thesis can be directly compared with normative data provided by Feeney et al (2001). Furthermore, this measure has been used in multiple studies that examine attachment styles in relation to the transition to parenthood. The ASQ is used in Chapter 3 to

explore mental representations of adult attachment in pregnancy in relation to antenatal maternal orientation.

*Concepts of Development Questionnaire (CODQ).* The Concepts of Development Questionnaire (Sameroff & Feil, 1985) is a 20-item scale aimed at measuring beliefs in relation to parenting. The Perspectivistic-Compensating subscale (10 items) explores the understanding of age-appropriate behaviour and the extent to which environment can influences a child's actions (e.g., "Children have to be treated differently as they grow older"). The Categorical subscale (10 items) gauges rigidity in opinion in regard to childrearing practices and oversimplified explanations for a child's actions, (e.g., "Babies have to be taught to behave themselves or they will be bad later on"). Given that these two subscales are not simply inverse measures of each other, the current thesis examines the Perspectivistic-Compensating subscale and the Categorical subscale as independent dimensions. Total scores on the Perspectivistic-Compensating subscale indicate a more complex understanding of child behaviour, whereas high scores on the Categorical subscale reflects more rigidity in parental beliefs. The ASQ was included as a measure in Chapter 3.

***Infant Caregiving Practices***

Four measures of mothers' caregiving practices were used in the current thesis. All were related to the management of infant feeds and sleeps.

*Infant feeding type.* As the type of infant feeding can have implications for other parenting methods, mothers were asked whether they were currently breastfeeding their infants exclusively, formula feeding exclusively or complementing breastfeeding with formula milk. In Chapter 4, feeding type was examined in these three categories. For Chapter 5, a different approach was taken. Given that Facilitator orientation has been associated with

prolonged breastfeeding, the formula feeding categories were combined to produce a dichotomous variable to distinguish those breastfeeding exclusively from those offering any formula feeding. Mothers were also asked if their infants had commenced solid foods.

*Scheduling of Infant Feeds and Sleeps (IFS, ISS).* Two separate but complementary 5-item scales were developed for the purposes of this research to gauge the degree to which mothers followed the infant's lead with regard to the timing of infant feeds and sleeps, or followed a mother-led predetermined schedule. Item wording, in part, evolved from the work of Ekström, Matthiesen, Widström, and Nissen (2005) and Raphael-Leff (2009) and was based on maternal orientation caregiving differences in regard to infant feeding.

For the IFS, three items were consistent with a Facilitator orientation (e.g., "I feed my baby whenever he or she wants"), and two reverse-coded items were indicative of a Regulator orientation (e.g., "I feed my baby on a schedule, i.e., 3–4 hourly"). Likewise, for the ISS, three items were representative of a Facilitator orientation (e.g. "I let my baby sleep whenever he or she wants"), and two reverse-coded items reflected a Regulator orientation (e.g., "I have set times for my baby's sleeps"). Lower scores on either the IFS or the ISS, indicated a more flexible Facilitator approach, whereas higher scores indicated a more structured Regulator approach. Items for both the IFS and the ISS are available in Appendix E.

*Parental Interactive Bedtime Behaviour Scale (PIBBS).* The Parental Interactive Bedtime Behaviour Scale (Morrell & Cortina-Borja, 2002) presents a range of possible parenting strategies commonly used by parents to encourage their infants to fall sleep. For the 17 settling strategies listed, frequency of use is indicated by responses recorded along a 5-point scale from *never* to *very often*. As the scale was originally devised for 1- and 2-year-olds,

wording was changed from *child* to *baby* to be appropriate for use with mothers of younger infants. Items are presented in Appendix F.

In Chapter 4, participant responses to the PIBBS were examined in relation to two possible factor structures: the original structure provided by Morrell and Cortina-Borja, and an alternate 4-factor structure developed for younger infants (Cronin, Halligan, & Murray, 2008). Perhaps due to the different ages or cultural background of the infants in those studies, data from Chapter 4 fitted neither of these two options well. The distinction between helping the infant to settle and allowing the infant to self-soothe was of most interest in terms of Facilitator and Regulator orientations. Therefore, a one-factor forced-choice solution using the maximum likelihood method with oblimin rotation was decided on to gauge the tendency to actively intervene to settle the infant. The final measure comprised 11 items that assessed tendency to intervene at sleep time. For example, "cuddling or rocking" and "give a feed/drink". One item was reverse coded: "leave to cry". All items were summed to produce a total score. Higher scores reflected more frequent intervention to encourage infant settling.

*Leave to cry.* In Chapter 5, maternal sleep-settling practices were gauged by one item only. Mothers were asked whether they had ever tried to "leave their baby to cry it out". Responses were coded as (a) *no*, (b) *yes, once*, (c) *yes, a few times*, and (d) *yes, often*.

*Mother-infant proximity overnight.* In Chapter 4, mothers were asked how often they slept in the same room as the infant, and how often they co-slept (shared a bed) with their infant overnight in the past month. Frequency for both items was gauged by a 3-point response set: *never, sometimes, always.*

In Chapter 5, sleeping arrangements were assessed in a similar way. Mothers were asked if their infant usually slept the night in: a *separate room* to them, or in the *same room*. In regard to co-sleeping, mothers were asked how often they slept the night in the parents' bed: *more often than not*, *occasionally*, or *never*.

***Indices of Maternal Adjustment***

*Experience of Motherhood Questionnaire (EMQ).* The Experience of Motherhood Questionnaire (Astbury, 1994) measures mother's self-reported coping and feelings of well-being in the mothering role. The 20-item questionnaire assesses both positive aspects (e.g., "I like my life just as it is") and negative aspects (e.g., "I find relatives undermine my confidence in looking after the baby") associated with motherhood. Responses are gauged along a 4-point scale from *not at all* to *very much so*. Positive items were reverse-coded, and all items summed to produce a total score. Higher scores were indicative of low satisfaction and issues with coping in the mothering role. The EMQ was used in Chapter 4 to assess a woman's feelings associated with mothering in the postnatal period. As both positive and negative experiences are included, this measure provided an overall evaluation of maternal subjective well-being.

*Edinburgh Postnatal Depression Scale (EPDS).* The Edinburgh Postnatal Depression Scale (Cox, Holden & Sagovsky, 1987) is a well-established 10-items scale used to screen for postnatal depression in the perinatal period. Items can be used in identical format during pregnancy and postpartum, and assess the presence of symptoms of depression (e.g., "I have been able to laugh and see the funny side of things"), anxiety, (e.g. "I have been anxious or worried for no good reason"), and issues with sleep ("I have been so unhappy that I have had difficulty sleeping"), over the past seven days. Women's estimations of symptoms are

measured by a 4-point response set with wording unique to individual items. Total EPDS scores were used for all analyses. However, a clinician from the research team contacted women for further assessment and referral to their medical providers when symptoms were within the subclinical or clinical range. Following the guidelines of Buist et al. (2008), women with a score of 10 or above were considered to have a moderate likelihood of clinical diagnosis, whereas those with scores of 13 or above, and/or suicidal ideation were considered highly likely to meet the criterion for clinical diagnosis.

The EPDS was used in Chapter 6, in pregnancy and postpartum, to assess symptoms of depression. Recent research suggests the EPDS does not reliability distinguish anxiety from depression (Matthey, Fisher, & Rowe, 2013; Rowe, Fisher, & Loh, 2008). However, in keeping with previous research in the field of maternal orientation, as well as the wider EPDS literature, the terms "depressive symptoms" and "symptoms of depression" are used interchangeably to indicate responses to the EPDS.

*Maternal Postnatal Attachment Scale (MPAS).* The Maternal Postnatal Attachment Scale (Condon & Corkindale, 1998) assesses how attached a mother feels to her infant postpartum. Nineteen items are presented as incomplete sentence stems. Respondents are required to complete each sentence by selecting an ending that most fits with their current feelings. Response options are unique to each individual item and may comprise two, four, or five possible sentence endings. Responses were recoded so that each item had the same scale for scoring: a score of 1 represented low feelings of attachment and 5 represented a strong attachment. For example, items with a four-point response set were recoded as follows: 1, 2.3, 3.6, 5; three-point response sets used the scores 1, 3, 5; and binary options

were recoded as 1 and 5 (John Condon, personal communication, September 7, 2012). Therefore, items had equal weighting when summed to create subscale and total scores.

Items can be divided among three subscales: Quality of Attachment (9 items; 3 reverse-coded; e.g., “When I am with the baby and other people are present, I feel proud of the baby”), Absence of Hostility (5 items; “Over the past three months, I have felt that I do not have enough time for myself or to pursue my own interests”) and Pleasure in Interaction (5 reverse-coded items; e.g., “I try to involve myself as much as I possibly can playing with the baby”). For the current study the total MPAS score (the sum of the three subscale scores) was used to indicate the perceived strength of the mother-infant bond. Higher scores indicated more positive maternal feelings toward the infant.

Table 2.1

*Overview of Methodology for Research Papers*

| | Chapter 3 | Chapter 4 | Chapter 5 | Chapter 6 |
|---|---|---|---|---|
| **Title** | Facilitators and Regulators: Psychometric properties of maternal orientation measures in pregnancy | Facilitators and Regulators: Infant sleep practices and maternal subjective well-being | Facilitators and Regulators: Antenatal maternal orientation and postnatal parenting practices | Facilitators and Regulators: Predicting mothers' mood and subjective attachment to their infants postpartum |
| **Research aims** | To explore reliability and construct validity of 3 maternal orientation measures in pregnancy | To test concurrent associations between postnatal maternal orientation, caregiving practices and maternal well-being | To examine the relationship among antenatal and postnatal maternal orientation and postnatal caregiving practices | To verify the predictive validity of antenatal maternal orientation in relation to maternal mood and attachment to the infant |
| **Design** | Cross-sectional online survey | Cross-sectional online survey | Prospective interview & online | Prospective interview & online |
| **Participants** | Sample A (*N* = 230) | Sample B (*N* = 274) | Sample C (*N* = 218) | Sample C (*N* = 218) |
| **Data collection** | | | | |
| Pregnancy | T1 = 12-41 weeks gestation | Not applicable | T1 = 32-weeks gestation | T1 = 32-weeks gestation |
| Early motherhood | Not applicable | T1 = 4-7 months postpartum | T2 = 6-months postpartum | T2 = 3-months postpartum |
| **Maternal orientation measures used** | FRQ (prenatal forml)[c]<br>AMOM-Revised[a]<br>PPQ subscales[b] | FRQ (postnatal form)[c] | AMOM-Revised[a]<br>PPQ subscales[b]<br>FRQ (postnatal form)[c] | AMOM-Revised[a]<br>PPQ subscales[b] |
| **Other measures** | Demographics<br>ASQ (Attachment Style)<br>CODQ (Concepts of Development) | Demographics<br>Infant milk feeding type<br>PIBBS (Parental Interactive Bedtime Behaviour Scale)<br>ISS (Infant Sleep Schedules)<br>Mother-infant sleep proximity<br>EMQ (Experience of Motherhood) | Demographics<br>Infant milk feeding type<br>IFS/ISS (Infant Feeding and Sleep Schedules)<br>Mother-infant sleep proximity<br>Infant settling methods | Demographics<br>Infant milk feeding type<br>EPDS (Edinburgh Postnatal Depression Scale)<br>MPAS (Maternal Postnatal Adjustment Scale) |

[a]Antenatal Maternal Orientation Measure – Revised (Sharp & Bramwell, 2004; modified by Roncolato & McMahon, 2011) [b]Placental Paradigm Questionnaire Facilitator and Regulator subscales (Raphael-Leff, 2009; refined by van Bussel, 2009) [c]Facilitator Regulator Questionnaire (Raphael-Leff, 2009).

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# CHAPTER 3

## Facilitators and Regulators:

## Psychometric Properties of Maternal Orientation Measures in Pregnancy

Wendy Roncolato and Catherine McMahon

**Published paper**

Roncolato, W., and McMahon, C. (2011). Facilitators and Regulators: Psychometric properties of maternal orientation measures in pregnancy. *Journal of Reproductive and Infant Psychology, 29,* 420–438. (see Appendix I for published format)

**Author Contributions.** Under the guidance of Associate Professor Catherine McMahon, I (Wendy Roncolato) managed all aspects of recruitment, website administration (with the initial assistance of a Web designer), compilation of existing questionnaires (specific measures are referenced), development of all new and modified questionnaires, statistical analyses (with the assistance of Dr Alan Taylor), scientific article writing, preparation for journal submission, and journal revisions prior to publication.

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## Abstract

***Background.*** Maternal orientation is a well-established theoretical construct with growing empirical support. However, with multiple published measures available, there has been little consensus in the way maternal orientation has been operationalised for empirical studies.

***Objective.*** To direct future research, we examine the psychometric properties of three maternal orientation measures in pregnancy: the Facilitator Regulator Questionnaire (FRQ prenatal form), the Placental Paradigm Questionnaire (PPQ) Facilitator and Regulator subscales, and the Antenatal Maternal Orientation Measure-Revised (AMOM-R), a modified AMOM developed for this study.

***Method.*** A sample of 230 pregnant women responded to an online survey gauging antenatal maternal orientation, attachment style and childrearing beliefs.

***Results.*** The AMOM-R had acceptable internal consistency and generated the most theoretically expected relationships. Women pregnant with their second or subsequent baby, who had planned pregnancies, and those not working full-time were higher on Facilitator and lower on Regulator tendencies (*ps* < .05). Women who endorsed more rigid childrearing beliefs were lower on Facilitator and higher on Regulator tendencies (*ps* < .05). Finally, women who reported higher anxiety over relationships and/or higher scores for discomfort with closeness scored higher on Regulator tendencies (*ps* < .01). No comparable results emerged for the Facilitator orientation.

***Conclusions.*** We recommend the AMOM-R as the most robust antenatal maternal orientation measure. Findings are discussed with regard to sample characteristics and implications for future research.

## Introduction

Personal experiences of pregnancy can be as individual as human babies. Even when commonalities are found, women can view the physical, psychological and social changes associated with the transition to parenthood in different ways. While some women adjust relatively easily to pregnancy and early motherhood, others find the changes to their bodies and lifestyles very challenging. Psychodynamically oriented developmental theorists have long argued that psychological adjustment to pregnancy is an important pre-requisite for taking on the maternal role and for a successful transition to parenthood (e.g., Benedek, 1959; Bibring, Dwyer, Huntington & Valenstein, 1961; Leifer, 1977). According to this view, a woman's conceptualisations during pregnancy of her infant and of herself as mother can influence her functioning as a parent in the postpartum period. These processes of adjustment to pregnancy are central to our investigations in the current study.

Working from a psychoanalytic perspective based on her own clinical experiences with pregnant women and new mothers, Raphael-Leff (1983) developed a rich theoretical model of maternal orientation to pregnancy and motherhood that acknowledges individual differences in the way the transition to motherhood is experienced, and at the same time classifies these different approaches into meaningful groups. Subsequently, van Bussel (2009) has succinctly described a maternal orientation as "a cluster of emotional, cognitive and behavioural expressions of underlying intrapsychic processes related to the pregnancy, the child and motherhood" (p. 14). Differences between orientations are evident not only in the anticipated mother-infant relationship and resulting mothering style, but also in the unconscious processes that underlie these orientations.

In Raphael-Leff's original model, she proposed a continuum of possible maternal orientations within two distinct and polar opposite end points: a "Facilitator" who expects to adapt to her baby and a "Regulator" who expects the baby to adapt to her (Raphael-Leff, 1983; 1985a). Orientations are postulated to remain relatively stable across pregnancy at least until the birth of the child (Raphael-Leff, 1985a), and a woman's relative leanings toward one orientation or the other are believed to provide an understanding about her approach to motherhood and likely future parenting practice. Although few are considered pure types, women who meet all defining criteria for their respective orientation (positioning them at either end of the spectrum) have been labelled "extreme Facilitators" or "extreme Regulators" (e.g. Raphael-Leff, 1983, p. 389).

Although the model has more recently incorporated two additional orientations, the "Reciprocator" and "Conflicted" orientations (Raphael-Leff, 1995), the current study focuses on the definition and measurement of the Facilitator and Regulator orientations, as these form both the historical foundation and construct parameters of the theory. Further, like van Bussel, Spitz and Demyttenaere (2009a, 2009b, 2010a), we investigate the Facilitator and the Regulator orientations as dimensions, rather than employing divisions into discrete maternal orientation categories. In doing so, we reduce the possibility of misclassification of orientation, and account for variation in the degree to which individuals hold steadfast to their views within a particular orientation (van Bussel, 2009).

In a series of publications, Raphael-Leff (1983, 1985a, 1985b, 1986, 1995, 2009) articulated the theoretical framework with an extensive focus on the profiles of Facilitators and Regulators, while acknowledging that many women fall somewhere between the two. These profiles can be briefly summarised as follows: a woman who holds a Facilitator position

feels that her identity is enhanced by pregnancy and imminent motherhood. She desires a birth without medical intervention ideally followed by the intimacy of breastfeeding and aspires to adapt to her baby's natural rhythm, believing that "baby knows best". She expects to follow the baby's cues, for example, with regard to the frequency, timing and duration of infant feeding and prefers not to share the care of her baby with others. Raphael-Leff proposes that women with this orientation to mothering are psychologically vulnerable to events (e.g., a birth requiring medical intervention) and circumstances (e.g., a need to return earlier than desired to paid work) that may compromise their aspirations for natural childbirth and baby-led parenting plans.

On the other hand, a woman holding a Regulator position feels a threat to her personal identity and independence through the transition to motherhood. Women with this orientation are open to and even positive about medical assistance during the birth, and are typically less committed to breastfeeding exclusively, believing that bottlefeeding will enable more shared babycare. The Regulator is characterised by a perception of the baby as an asocial being who should adapt to her needs and routines, in the context of a "mother knows best" stance. Predictability and order in a daily caretaking routine are valued, for example favouring scheduled feeding at set times. As in the case of Facilitators, external events and circumstances can challenge this orientation. When there is no respite from the demands of babycare (e.g., a lack of opportunity for participation in paid work, or lack of alternate childcarers), early motherhood can be a potential misery for the Regulator. Similarly, caregiving regimes that strongly promote breastfeeding, particularly those that encourage feeding "on demand", may be experienced as "invasive and depleting" (Raphael-Leff, 1985a).

In short, the Facilitator and the Regulator have contrasting expectations regarding future motherhood and parenting practice, and as a consequence are vulnerable in different ways.

Extending on this model, the "Placental Paradigm" (Raphael-Leff, 1995), focuses on the mother's "imagined interchange" between herself and her baby and whether this union is perceived as fundamentally benign or harmful (p. 49). With this theory as the starting point, the Facilitator and the Regulator have been described in terms of the different underlying defenses that drive the opinion and subsequent behaviour of each orientation. These defenses are most potent in relation to the extreme Facilitator and extreme Regulator positions (Raphael-Leff, 1995, 2009).

The Facilitator, prone to idealisation, views pregnancy as a state of mutual enrichment for herself and her baby. She guards against any negative maternal feelings or ambivalence, and strives to maintain the myth of abundant and unconditional love without reservation or resentment. When taken to the extreme, the quest for the perfect union can become pathological, culminating in higher than manageable ideals across the transition to parenthood (Raphael-Leff, 2009).

The Regulator, in contrast, regards her pregnancy as a struggle of competing needs between herself and her baby. At worst, she experiences persecutory ideation, viewing her baby as a parasitic intruder, draining her of resources and threatening to uncover hidden vulnerabilities. In reaction, she distances herself emotionally from her baby. A continued state of detachment postpartum is sustained through adherence to a structured babycare routine that negates any need to decipher infant signals or understand her baby's own idiosyncrasies (Raphael-Leff, 1995; 2009). In sum, the Facilitator and Regulator differ in their underlying psychological defenses, their capacity to relate to and engage with a dependent

infant, and their tendency to use different strategies to cope with the ambivalent feelings that typically accompany motherhood.

Three self-report measures are available to measure maternal orientation: the Facilitator Regulator Questionnaire (FRQ; Raphael-Leff, 1985b, 2009), the Antenatal Maternal Orientation Measure (AMOM; Sharp & Bramwell, 2004) and the Placental Paradigm Questionnaire Facilitator and Regulator subscales (PPQ; Raphael-Leff, 2009). The FRQ, originally designed as a 3-item postnatal measure, more recently evolved into a 5-item scale and can be used as an antenatal tool with wording modification approved by the author. The AMOM and the PPQ assess pregnancy experience and mothering expectation, and accordingly, are restricted to use in the antenatal period. Each of these three scales accesses the maternal orientation construct at one of the two levels described above. The FRQ and the AMOM both assess conscious mothering expectations including practical caregiving plans and views on baby communication, sociability and mother-baby interaction. The AMOM includes a more detailed exploration of the expected emotional adjustment to motherhood and anticipated feelings toward the baby. In contrast, the PPQ subscales aim to access the deeper unconscious responses to the symbiotic experience of pregnancy and beyond, with Facilitator and Regulator orientation indexed primarily by self-reported presence or absence of idealisation and persecutory ideation, respectively.

An emerging body of work provides empirical support for these theoretical concepts. However the comparison of results across studies is constrained by variability in the way the construct has been measured, with all three measures used independently and interchangeably, and in the case of the FRQ at times in differing form. Consistently, the Regulator orientation has been associated with an overall increased risk of antenatal and/or

postnatal depression, independent of the maternal orientation measure used (FRQ, Raphael-Leff, 1985b; AMOM, Sharp & Bramwell; PPQ, van Bussel et al., 2009b). However, associations with other variables, such as parity, have produced contradictory findings. Raphael-Leff (1985b) and Scher and Blumberg (1992) defined maternal orientation using the 3-item FRQ measured postpartum, and two of the three FRQ items, respectively. Both studies reported the Regulator orientation to be more common in first-time mothers. In contrast, van Bussel (2009) employed a 10-item refined version of the PPQ Facilitator and Regulator subscales in pregnancy, and found that first-time expectant mothers were more likely to endorse a Facilitator orientation. Additionally, Facilitators more commonly had planned their pregnancies.

Further, apart from recent work examining the psychometric properties of the PPQ Facilitator and Regulator subscales (van Bussel, 2009) information on the reliability and validity of the three antenatal maternal orientation measures is scant. Consequently, the current study aims to extend existing knowledge about the psychometric properties by investigating the internal consistency of items for the three measures, to explore construct validity by assessing correlations among the maternal orientation measures and to further investigate demographic correlates of the constructs in the context of equivocal findings to date.

**Construct Validity**

We also seek to further explore construct validity by examining associations with two theoretically related constructs, namely adult attachment style and flexibility/rigidity of parental beliefs.

***Attachment style.*** Attachment theory seems a logical framework from which to explore orientations to motherhood. Both attachment and maternal orientation theories propose that internal working models are formed as a result of childhood experience and have considerable influence on adult relationship functioning and future parenting models (Bowlby, 1980; Raphael-Leff, 1985b, 2009). Furthermore, attachment theory proposes that different defenses can emerge in response to inadequate caregiving from attachment figures, which subsequently impact future intimate relationship expectations, perceptions and experiences (Bowlby, 1979). Underlying defenses are similarly proposed to underlie maternal orientations incorporating the conceptualisation of pregnancy, the infant and future caregiving plans (Raphael-Leff, 2009). In the current study we explore relationships between attachment styles in adulthood and maternal orientation.

Adult attachment theorists have applied classifications originally defined through laboratory studies of infants separated from their mothers (Ainsworth, Blehar, Waters & Wall, 1978) to describe individual differences in adult concerns and defensive styles with respect to close relationships. As an alternative to the clinically administered Adult Attachment Interview (AAI; George, Kaplan & Main, 1985), Hazan and Shaver (1987) developed a self-report measure that defined three adult attachment typologies analogous to those used to classify infant attachment behaviour; namely, secure, insecure-avoidant and insecure-anxious/ambivalent. According to Hazan and Shaver's model, secure individuals reported feelings of trust with relationship partners and were comfortable to seek and accept support when needed, whereas insecure individuals reported anxiety about personal relationships characterised primarily by a fear of closeness (avoidant type) or by unmet emotional needs (anxious/ambivalent type).

More recently, researchers have developed measures to gauge individual differences in adult attachment using a dimensional approach. Two orthogonal dimensions: attachment-related avoidance and attachment-related anxiety, have consistently emerged as indices of insecurity in adult attachment (e.g., Brennan, Clark & Shaver, 1998; Feeney, Hohaus, Noller & Alexander, 2001). In the current study, individual differences on these dimensions are compared to antenatal orientation across the Facilitator and Regulator spectrum.

We expect that a preference for a more regimented approach to babycare, typical of the Regulator profile, is likely to be associated with an avoidant attachment style. As defenses are believed to underlie planned parenting practice (Raphael-Leff, 2009), we expect that an association will be evident, irrespective of the maternal orientation measure employed. Conversely, we propose that higher Facilitator scores (indicating greater commitment to a Facilitator style) will be associated with attachment-related anxiety, but not attachment-related avoidance. As Facilitator orientation becomes more extreme, a more intense style of parenting could prevail, characterised by expectations of total maternal devotion, uninterrupted presence and constant maternal vigilance. These behaviours are comparable to those of individuals who are preoccupied and fearful in personal relationships.

***Parental conceptions of children.*** Since the Facilitator-Regulator model makes explicit predictions about maternal perceptions of the infant and subsequent caretaking style, it is plausible that maternal orientation may be related to parental conceptions of children and of the parenting role more generally. Sameroff and Feil (1985) proposed that parents have different cognitive representations of parenthood and ideally progress from rigid parenting rules and simplistic interpretations of children's behaviour to more flexible and considered

child-sensitive parenting responses with the growing awareness of environmental influences on child behaviour.

The Regulator approach is characterised by a preference for a set routine, regardless of the unique temperament of the child. We propose, therefore, that Sameroff and Feil's less-developed cognitive structure of parenting will be directly related to Regulator tendencies. The Facilitator approach, on the other hand, favours infant-led parenting practice with an implicit recognition of the infant's capacity for meaningful interaction, and parental expectation and tolerance for changing circumstances and schedules. However, more extreme Facilitator positions, characterised by exceptionally high and inflexible ideals for future caregiving, may also be associated with a more rigid, less adaptive conceptualisation of both parenting and children. Consequently, we propose that those higher on Facilitator orientation will endorse inflexible opinions regarding childrearing more generally, in the same way as those tending toward the Regulator orientation.

In summary, the first objective of the current study is to add to existing knowledge regarding the psychometric properties of the three measures of maternal orientation. Specifically we aim: (a) to establish reliability for the extended 5-item FRQ in pregnancy as well as for a revised version of the AMOM[1]; (b) to replicate and extend psychometric findings regarding the reduced PPQ Facilitator and Regulator subscales defined by van Bussel (2009); and (c) to examine inter-relationships among the three measures.

[1] For the current study, in relation to the AMOM, we have divided the item content to create two separate Facilitator and Regulator subscales with unipolar response sets to allow for inconsistency in responses across maternal orientation domains.

A second objective is to further explore the construct validity of the measures by clarifying associations with parity and other pregnancy-related factors, and by examining correlations with adult attachment style and rigidity in childrearing beliefs. We propose that higher Regulator scores (irrespective of the measure) will be associated with higher scores for attachment insecurity characterised by discomfort with closeness, whereas those higher on Facilitator scores will be associated with anxiety over relationships. In addition, we predict that those either high in Regulator or Facilitator orientation will be associated with (a) less flexibility and less complexity of parenting opinion, and (b) more rigidity of parenting opinion as assessed by the Concepts of Development Questionnaire.

## Method

### Participants

Women who were pregnant with singleton pregnancies and currently residing in Australia were eligible to participate. Two hundred and sixty-two women who met criteria for inclusion responded to advertisements in mother and baby online forums, (*n* = 152, 58.0%), mother and baby magazines, (*n* = 54, 26.0%), flyer drops at local day care centres or by word of mouth, (*n* = 48, 18.3%), and Facebook networks, (*n* = 8, 3.1%). Of these 262 participants, 222 had complete data sets. Eight women with incomplete data sets had completed more than 90% of items. Missing scores for the participants were prorated at the item level based on mean scores for the relevant subscale. The final sample comprised 230 participants.

Respondents were predominantly in a partnered relationship, Caucasian, and well-educated, not unlike samples in previous studies of maternal orientation in the UK (Raphael-Leff, 1983) and in Belgium (van Bussel et al., 2009a, 2009b). The percentage of women

expecting their first baby (43.0%; see Table 3.1) was similar to that reported for the wider community of Australian mothers at 41.6% (Laws, Li & Sullivan, 2010).

Maternal age ranged from 19 to 45 years, (*M* = 31.62, *SD* = 4.99), comparable to the current median birthing age of 30.7 years for Australian women (Australian Bureau of Statistics, 2009). Gestational age ranged from 12 to 41 weeks, (*M* = 27.44, *SD* = 7.90). The rate of Assisted Reproductive Technology (ART) at 7.4% was more common in this sample when compared with 3.3% of Australian mothers (Wang, Chambers, & Sullivan, 2010), although less common than in the Belgian sample at 12.4% (van Bussel, 2009). See Table 3.1 for sample details.

**Procedure**

After gaining ethics approval, a password-protected self-administered questionnaire was designed using Qualtrics Research Suite survey creation software (Qualtrics Labs Inc., 2009) to enable online participation. In addition to items assessing demographic variables displayed in Table 3.1, the questionnaire included the three antenatal maternal orientation measures, as well as psychosocial measures of adult attachment style and rigidity of parental conceptions of children.

Table 3.1

*Sample Demographics (N = 230)*

| Characteristic | Sample features | Frequency | Percentage |
|---|---|---|---|
| Parity[a] | Nulliparous | 99 | 43.0 |
| | Primiparous | 90 | 39.1 |
| | Multiparous | 41 | 17.8 |
| Relationship status | Married or de facto | 221 | 96.1 |
| Ethnicity | Caucasian | 220 | 95.7 |
| Private health insurance | Insured | 151 | 65.7 |
| Education | Attained university degree | 147 | 63.9 |
| Planned pregnancy | Planned | 190 | 82.6 |
| Current employment | Full-time[b] work or study | 87 | 37.8 |
| Physical health in pregnancy | Well or mostly well | 160 | 69.6 |
| Assisted Reproduction Technology | Used IVF or Chlormid | 17 | 7.4 |

*Note:* [a]for parity, all variants are presented (*N* = 230, 100%). Only the prominent feature is presented for the remainder of characteristics, [b] ≥ 35 hrs/wk.

**Antenatal Maternal Orientation Measures**

The ***Facilitator Regulator Questionnaire*** (FRQ; Raphael-Leff, 2009) measures maternal orientation with five items including a mother's planned use of babycare routines, baby feeding schedules, and her perception of her baby's capacity to socialise, interact and communicate. As the second question related to infant feeding is in two parts, there are six individual questions in total. Given that the scale is published only in its original postnatal

form, permission for wording modifications for use in pregnancy was obtained (J. Raphael-Leff, personal communication, December 21, 2009). Total scores ranged from –1 to 16 with low scores indicative of a Facilitator and high scores a Regulator orientation. A low internal consistency was found for the original 3-item postnatal scale ($\alpha$ = 0.21; Scher & Blumberg, 1992). No reliability information has been published to date for the amended 5-item scale. Inter-rater reliability for a randomly selected subset of 72 participants was generated for FRQ item 1 (baby routines), as this open-ended question required qualitative analysis to define maternal orientation sub-categories. Acceptable agreement (Landis & Koch, 1977) was achieved (Cohen's kappa = .76, $p$ = .00) when published rules for categorisation were followed (see Raphael-Leff, 2009).

The ***Antenatal Maternal Orientation Measure*** (AMOM; Sharp & Bramwell, 2004) comprises 27 self-report items divided into five subscales covering expectations of (1) labour, (2) birth, (3) what the baby will be like at first, (4) what the mother will be like in the early weeks after giving birth, and (5) feeding plans (breast or bottle). For the current study, two modifications were made with the author's permission (H.M. Sharp, personal communication, December 19, 2009). First, we defined maternal orientation with responses to subscales 3, 4 and 5 only, as these three were shown to discriminate among orientation categories, albeit in a non-uniform way for the feeding subscale (Sharp & Bramwell, 2004). Second, the format of the subscales was altered. In the original version, each item presented a Facilitator and Regulator statement, as opposing pairs, with a 7-point response scale in between. Respondents were required to indicate their preference toward one statement (and necessarily away from the other). Consequently, participants could only endorse a Facilitator or a Regulator position for each item, not both. As Scher and Blumberg (1992) had

established that women can hold both Facilitator and Regulator opinions at the same time, we separated each paired statement into two, giving an independent Facilitator statement (e.g., "I will be mostly feeling fulfilled") and an independent Regulator statement (e.g., "I will be mostly feeling trapped"). Each revised item was presented with a 6-point response set ranging from *strongly disagree* to *strongly agree*. Scores across all three subscales were summed to yield total scores for both a Facilitator and a Regulator orientation, respectively, with higher scores indicating a tendency toward that orientation.

The ***Placental Paradigm Questionnaire*** (PPQ; Raphael-Leff 2009) consists of 28 items addressing a woman's feelings towards herself, her baby and her pregnancy. The questionnaire was developed as a screening tool to detect specific antenatal emotional disturbance, as well as the psychoanalytic defenses of idealisation, persecution, obsession and detachment. Antenatal maternal orientation can also be determined from responses to 13 of the items constituting a Facilitator and a Regulator subscale, respectively (Raphael-Leff, 2009). A Facilitator orientation is measured by the tendency to idealise pregnancy (e.g., "Pregnancy is the peak of my female experience"), whereas a Regulator orientation is defined primarily by the presence of persecutory thought (e.g., "The baby seems like an intruder or parasite").

For this study, we adopted various modifications recommended in recent research by van Bussel (2009). First, we used just 10 items: a 5-item Facilitator and 5-item Regulator PPQ subscale, as van Bussel reported improved internal consistency by removing original items 3, 12, and 14. Second, although the PPQ subscales were originally designed so that low scores on all subscales indicated a Facilitator and high scores a Regulator tendency, we reverse coded the Facilitator scale so that results could be directly compared with van Bussel's work.

As a result, high scores on each subscale reflected a higher Facilitator or Regulator orientation, respectively, consistent with the AMOM-R above. Finally, response options were extended from the original 4-point to a 7-point scale to allow greater sensitivity in detecting differences in maternal orientation.

**Psychosocial Measures**

The ***Attachment Style Questionnaire*** (ASQ; Feeney, Hohaus, Noller, & Alexander, 2001) is a 40-item scale measuring dimensions of attachment style in adults across a range of social situations including, but not limited to, romantic partnerships. It was developed using an Australian sample, and has been employed directly in studies investigating the transition to parenthood. Responses are given along a 6-point scale from *strongly disagree* to *strongly agree*. The factors, Discomfort with Closeness (16 items; e.g., "Doing your best is more important than getting on with others") and Anxiety over Relationships (13 items; e.g., "It's important to me that other people like me") have been found to reliably assess attachment style. For the current sample, Cronbach's alpha coefficients were, $\alpha$ = .84 and .89, for the Discomfort with Closeness Scale and Anxiety over Relationships Scale, respectively.

The ***Concepts of Development Questionnaire*** (CODQ; Sameroff & Feil, 1985) assesses rigidity in childrearing opinion as well as adult understanding and cognitive flexibility when evaluating child behaviour. The 20-item scale contains two 10-item subscales: the Perspectivistic-Compensating subscale and the Categorical subscale. High scores on the Perspectivistic-Compensating subscale reveal insight into not only age-appropriate behaviour, but also how a child's actions can be influenced by their environment (e.g., "Children have to be treated differently as they grow older"), whereas high scores on the Categorical subscale indicate oversimplified interpretations of children's behaviour and less

flexible parenting opinion (e.g., "Babies have to be taught to behave themselves or they will be bad later on"). Reliability of the combined scale has been reported as high ($\alpha$ = .82), however since the subscales are not simply inverse measures of each other, their influence on maternal orientation is examined separately in case of differences in effect. For the current sample, internal consistency was $\alpha$ = .51 and .68, for the Perspectivistic-Compensating and Categorical subscales, respectively.

**Data Analysis**

Data were imported from the Qualtrics Research Suite (Qualtrics Labs Inc., 2009) to IBM SPSS Statistics (IBM, 2009) for statistical analyses. Internal consistencies of the maternal orientation measures were established with Cronbach's alpha coefficients ($\alpha$). Then, coefficients were re-examined for the FRQ (prenatal form) and AMOM-R after omitting redundant items, as applied by van Bussel (2009) when refining the PPQ subscales. T-tests were performed for comparisons between dichotomous demographic variables and maternal orientation subscales. When Levene's test for homogeneity of variance was significant, we presented the *t*-value that was not based on the assumption of equal variance. Prior to conducting *t*-tests, we used the Analysis of Variance procedure to produce standardised residuals. Inspection of residuals for the FRQ (prenatal form), PPQ Facilitator subscale and both AMOM-R subscales showed there were no substantial departures from normality. In contrast, deviations from normality were found for the Regulator subscale. A square root transformation of the PPQ Regulator subscale produced uniform residuals and reduced the

skew from 1.29[2] to .22. Consequently the transformed data is used for all analyses and parametric tests followed. A significance level of .05 was used for all statistical tests.

## Results

### Psychometric Properties of the Maternal Orientation Measures

***Reliability analyses.*** Table 3.2 presents Cronbach's alpha coefficients for each maternal orientation measure. For the FRQ (prenatal form), all items were retained, as removal of the baby communication item achieved only a slight increase in Cronbach's alpha coefficient (.41 to .46). For the AMOM-R, removal of several items resulted in a substantial improvement in Cronbach's alpha coefficients from .62 to .71 for the reduced 8-item Regulator subscale and from .60 to .72 for the reduced 10-item Facilitator subscale (see Appendix C). Due to acceptable internal consistency with limited items, a one factor solution was adopted for each AMOM-R scale. Similarly, acceptable internal consistency (see Table 3.2) was found for van Bussel's reduced 5-item Facilitator and 5-item Regulator PPQ subscales, supporting their use in subsequent analyses.

[2] Despite the acknowledgement by some women that they occasionally experienced the baby as an intruder or parasite, (*n* = 31, 14.2%), and that they sometimes felt an unease at sharing their body with the baby, (*n* = 44, 20.2%), very few (*n* = 2, 0.01%) indicated that these thoughts reflected a constant state of mind. This low rate of endorsement for persistent persecutory ideation accounted for the positive skew in distribution for the PPQ Regulator subscale.

Table 3.2

*Psychometric properties of the FRQ (prenatal form), the AMOM-R and the PPQ subscales (N = 230)*

| | | | | | | Range | | |
|---|---|---|---|---|---|---|---|---|
| | Items | $\alpha$[a] | *M* | *SD* | *Mdn* | Potential | Actual | Skew |
| FRQ prenatal | 5+1[b] | .41 | 5.02 | 2.85 | 5.0 | –1–16 | –1–14 | .03 |
| AMOM-R[c] | | | | | | | | |
| Regulator | 8 | .71 | 14.00 | 6.09 | 14.0 | 0–40 | 0–31 | .01 |
| Facilitator | 10 | .72 | 33.09 | 6.19 | 33.0 | 0–50 | 14–48 | –.14 |
| PPQ | | | | | | | | |
| Regulator[d] | 5 | .66 | 1.66 | 1.91 | 1.0 | 0–15 | 0–8 | 1.29 |
| Facilitator | 5 | .73 | 9.35 | 2.71 | 9.0 | 0–15 | 2–15 | –.16 |

*Note:* [a]Cronbach's alpha, [b]Five items and one sub item, [c]AMOM-R refined version (see Appendix C), [d]PPQ Regulator scale showing values prior to square root transformation.

An examination of mean scores revealed the current sample endorsed more Facilitator than Regulator tendencies across all measures (see Table 3.2). Specifically, on the FRQ (prenatal form), given that low scores indicate Facilitator orientation and high scores indicate Regulator orientation, the low sample mean resulted from relatively few high scores (Regulator tendencies) among our sample. Similarly, the mean scores for all AMOM-R and PPQ subscales were higher for Facilitator orientation and lower for Regulator orientation.

***Construct validity.*** To determine construct validity, associations were first examined among the three maternal orientation measures, then in relation to the demographic

variables listed in Table 3.1, and finally in relation to psychosocial variables of attachment style and rigidity in parental conceptions of children.

As shown in Table 3.3, all inter-correlations among maternal orientation measures were significant and in the direction expected. The FRQ (prenatal form) and the AMOM-R were highly correlated, whereas the PPQ subscales showed a weaker correlation with both the FRQ (prenatal form) and the AMOM-R.

Table 3.3

*Inter-correlations among maternal orientation scales: FRQ (prenatal form), AMOM-R and PPQ subscales (N = 230).*

| Measure | 1 | 2 | 3 | 4[a] | 5 |
|---|---|---|---|---|---|
| 1. FRQ (prenatal) | — | .57 ** | –.52 ** | .15 * | –.17 * |
| 2. AMOM-R Regulator | | — | –.63 ** | .35 ** | –.19 * |
| 3. AMOM-R Facilitator | | | — | –.27 ** | .29 ** |
| 4. PPQ Regulator[a] | | | | — | –.30 ** |
| 5. PPQ Facilitator | | | | | — |

*Note:* Pearson correlation coefficients are presented to indicate degree of correlation. [a]PPQ Regulator represents the square root transformation of the PPQ Regulator subscale.*$p < .05$, **$p < .001$.

Table 3.4

*Antenatal Maternal Orientation and its relationship to Parity, Current Work Status, Pregnancy Planning and Physical Health in Pregnancy (N = 230)*

| | Parity | | | | Current work status | | | | Pregnancy planning | | | | Physical health in pregnancy | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No children | Children | | | FT | PT | | | Unplanned | Planned | | | Unwell | Mostly well | | |
| | (*n* = 99) | (*n* = 131) | | | (*n* = 87) | (*n* = 143) | | | (*n* = 40) | (*n* = 190) | | | (*n* = 70) | (*n* = 160) | | |
| | *M* (*SD*) | *M* (*SD*) | *t* | *p* | *M* (*SD*) | *M* (*SD*) | *t* | *p* | *M* (*SD*) | *M* (*SD*) | *t* | *p* | *M* (*SD*) | *M* (*SD*) | *t* | *p* |
| FRQ | 5.44 (2.73) | 4.69 (2.90) | 1.99 | .048 | 5.68 (2.73) | 4.63 (2.86) | –2.74 | .006 | 5.60 (2.48) | 4.89 (2.91) | –1.43 | .155 | 5.09 (2.98) | 4.99 (2.80) | –.24 | .810 |
| AMOM-R Regulator | 14.92 (4.88) | 13.31 (6.80) | 1.99 | .047 | 15.31 (5.24) | 13.23 (6.46) | –2.67[b] | .008 | 16.73 (5.72) | 13.43 (6.02) | –3.17 | .002 | 14.56 (6.05) | 13.76 (6.10) | –.91 | .363 |
| AMOM-R Facilitator | 31.90 (5.48) | 33.98 (6.55) | –2.56 | .011 | 31.17 (6.27) | 34.23 (5.88) | 3.73 | <.001 | 31.23 (5.99) | 33.48 (6.17) | 2.11 | .036 | 32.23 (6.50) | 33.46 (6.03) | 1.39 | .165 |
| PPQ Regulator[a] | 1.05 ( .94) | .85 ( .82) | 1.05 | .297 | .96 (1.02) | .96 ( .83) | –.55 | .587 | 1.22 ( .87) | .94 ( .82) | –1.95 | .053 | 1.35 ( .89) | .82 ( .76) | –4.61 | <.001 |
| PPQ Facilitator | 9.70 (2.73) | 9.09 (2.67) | 1.70 | .091 | 9.22 (2.82) | 9.43 (2.66) | .55 | .586 | 8.80 (2.72) | 9.47 (2.70) | 1.42 | .158 | 7.99 (2.73) | 9.94 (2.48) | 5.32 | <.001 |

*Note:* No children = nulliparous; Children = primiparous and multiparous; FT = ≥ 35 hours per week work or study, PT = <35 hours per week work or study or none, Unplanned = unplanned pregnancy, Planned = planned pregnancy; Unwell = reported feeling well only sometimes, rarely or not at all during pregnancy; Mostly well = reported feeling well always or mostly during pregnancy. [a]PPQ Regulator represents square root transformation of the PPQ Regulator subscale. [b]Equal variances not assumed.

Table 3.4 summarises associations with demographic variables and shows that those who were nulliparous and those engaged in more than 35 hours of work/study per week had higher Regulator scores on the FRQ (prenatal form) and the AMOM-R Regulator subscale, and lower scores on the AMOM-R Facilitator subscale (all indicating more Regulator tendencies). Furthermore, higher AMOM-R Regulator scores and lower AMOM-R Facilitator scores (indicating more Regulator tendencies) were more common for women with unplanned than planned pregnancies. Women who reported physical health problems in pregnancy had higher PPQ Regulator scores and lower PPQ Facilitator scores. There were no other significant associations between maternal orientation (as defined by the FRQ prenatal form, AMOM-R or PPQ subscales) and maternal age, gestation, relationship status, ethnicity, insurance, education (all *ps*> .05). The ART group (*n* = 17) was too small for comparison.

Comparison of scores for the current sample with available normative data for adult attachment security and rigidity of parental conceptions of children indicates comparable scores for the Discomfort with Closeness Scale (Feeney et al., 2001), and the Perspectivistic-Compensating and Categorical dimensions of the Concepts of Development Questionnaire (Sameroff & Feil, 1985); see Table 3.5.

Correlations (Table 3.5) indicate that the majority of statistically significant relationships were found among the Regulator subscales on both the AMOM-R and PPQ and other psychosocial variables, and patterns of association were similar for both. As predicted, higher scores on the Regulator scales were associated with higher scores on Discomfort with Closeness, but also related to higher scores on Anxiety over Relationships. Further, as expected, higher Regulator scores (on both measures) were associated with higher scores on the Categorical scale of the Concepts of Development Questionnaire (indicating more

rigidity), but no association was found for maternal orientation and the Perspectivistic-Compensating subscale. All significant associations were weak to moderate showing links among variables, but not to the extent of redundancy.

Table 3.5

*Correlations among Antenatal Maternal Orientation, Attachment Style Questionnaire (ASQ) and Concepts of Development Questionnaire (CODQ)(N = 230)*

| | | | Maternal Orientation Measures | | | | |
|---|---|---|---|---|---|---|---|
| | | | FRQ | AMOM-R | | PPQ | |
| | M (SD) previous[a,b] | M (SD) current | | Reg *r* | Fac *r* | Reg[c] *r* | Fac *r* |
| ASQ | | | | | | | |
| Discomfort with Closeness | 45.31[a] | 49.72 (9.74) | .10 | .31 ** | –.11 | .33 ** | –.11 |
| Anxiety over Relationships | | 38.95 (9.95) | .04 | .24 ** | –.05 | .35 ** | –.05 |
| CODQ | | | | | | | |
| Perspectivistic-Compensating | 2.37[b] | 2.06 (0.26) | .01 | –.01 | .03 | –.08 | .06 |
| Categorical | 0.78[b] | 0.86 (0.33) | .27 ** | .35 ** | –.16 * | .15 * | –.07 |

*Note: r* = Pearson correlation coefficient, [a]Feeney et al., (2001), p. 234; [b]Sameroff and Feil, (1985), p. 97, [c]PPQ Regulator represents square root transformation of the PPQ Regulator subscale. *$p < 0.05$, **$p < 0.001$

Few significant relationships emerged for the FRQ (prenatal form) and Facilitator subscales of the AMOM-R and the PPQ. Higher scores on the FRQ (prenatal form), and lower scores on the AMOM-R Facilitator subscale (both indicating Regulator tendencies) were

significantly correlated with higher scores on the Categorical dimensions of the Concepts of Development Questionnaire, indicative of less flexible parenting opinion. No significant associations were found for the PPQ Facilitator subscale in relation to adult attachment style or rigidity of parental conceptions of children.

## Discussion

Maternal orientation is a well-defined theoretical construct with emerging empirical support. However, the use of three different self-report scales has made comparison across studies difficult and could lead to redundancy in future research efforts. As a way forward, this research aimed to establish and compare psychometric properties for all three measures in an Australian sample of expectant mothers, and in addition, to extend existing knowledge of the Facilitator and Regulator profiles.

**Internal Consistency**

Associations among the three measures suggest that they are all tapping a similar construct, however measures differed with regard to scale reliability. The AMOM-R, a revised version of the AMOM amended in the current study (see Appendix C), had the most acceptable internal consistency across both subscales. Although the PPQ Facilitator subscale produced an acceptable Cronbach's alpha coefficient, the PPQ Regulator subscale was less favourable ($\alpha$ = .73 and .66, respectively). These were similar values to those reported by van Bussel (2009). In relation to the 5-item FRQ (prenatal form), internal consistency was less than optimal, even though the results demonstrated a substantial improvement from those reported for the 3-item postnatal scale ($\alpha$ = .21; Scher & Blumberg, 1992). Our results suggest the FRQ (prenatal form), in self-administered questionnaire format, does not have the required reliability when used with pregnant women.

**Construct Validity**

The AMOM-R yielded the most theoretically expected associations with demographic variables. Findings regarding parity were comparable with previous studies (Scher & Blumberg, 1992; Raphael-Leff, 1985b); lower Facilitator and higher Regulator tendencies were more common among those expecting their first child. Furthermore, in relation to pregnancy planning, results replicate previous findings of van Bussel (2009); women who had planned their pregnancies were higher on Facilitator tendencies and lower on Regulator tendencies. In addition, a novel finding emerged in relation to current work status. Women who were working full-time were lower on Facilitator and higher on Regulator tendencies, than were those working part-time or not at all. Raphael-Leff (2009) proposed that the Regulator is more likely to carry on as usual through pregnancy, and continue to work as long as possible (Raphael-Leff, 1986), reluctant to relinquish her current identity that is grounded in competent functioning in the adult world (Raphael-Leff, 1985b). Therefore, demographic associations for the AMOM-R were all in accordance with theory.

The FRQ (prenatal form), when compared to the AMOM-R, showed similar but weaker associations with demographic variables, whereas the PPQ subscales were most strongly associated with reported physical health in pregnancy. Women who had felt unwell during their pregnancy had a less positive view of pregnancy and had adopted more of a defensive position toward their foetus than those who had felt mostly well. Given that our study is the first to our knowledge to investigate associations between maternal orientation and physical illness in pregnancy, there is a need for further research to investigate direction of causality.

As predicted and consistent with the theory, we found that Regulator tendencies were associated with an avoidant attachment style (more discomfort with closeness). However, Regulator tendencies were also associated with anxiety over relationships as

measured by the AMOM-R and PPQ subscales. Consequently, persecutory ideation and/or the more restrained caregiving practices associated with Regulator tendencies might reflect a more pervasive undercurrent of relationship anxiety for these individuals.

Contrary to expectation, those higher on Facilitator tendencies were not found to have a more anxious attachment style. Associations between attachment style and a Facilitator orientation may well be more complex. Moderate and more extreme representations of a Facilitator orientation might reflect very different profiles. Certainly, the Facilitator position has been described in a positive light, as an adaptive, baby-focused mindset establishing the context for positive mother and baby interactions (Raphael-Leff, 1983), but also as a detrimental approach when characterised by over-identification with the foetus, unattainable caretaking ideals, and potentially, future enmeshment (Raphael-Leff, 2009).

Facilitator beliefs and characteristics such as desire for physical closeness, responsive child-centred parenting and an emphasis on the importance of maternal emotional availability may provide the necessary context to foster maternal attunement (Isabella & Belsky, 1991) and appear closely linked to those maternal behaviours characterising mothers of securely attached infants (Ainsworth et al., 1978). Indeed, one study has demonstrated that the Facilitator approach is more likely to promote secure infant attachment (Scher, 2001). A more extreme Facilitator orientation, however, characterised by idealisation of mothering and expectations of total maternal devotion, uninterrupted presence and constant maternal vigilance, may hinder appropriate infant exploration and individuation. Furthermore, this more intense style of parenting appears less conducive to a healthy emotional context for both mother and baby, and seems less akin to a secure maternal

attachment style. Future research is needed to test the possibility of more complex associations between these variables that cannot be detected simply by correlation.

In relation to childrearing beliefs, as hypothesised, those higher on Regulator orientation (on all three maternal orientation measures) expressed more rigidity in general parenting opinion. Regulator tendencies, characterised primarily by a view of the infant as asocial coupled with a parenting plan for a regimented routine, were associated with more simplistic interpretations of children's behaviour and more definite parenting rules and opinions.

Contrary to expectation, those higher on Facilitator orientation were not found to hold the same rigidity in parenting views. A modest but significant association for the AMOM-R Facilitator scale supported the opposite proposition; the more baby-focused the caregiving approach, the less rigidity in general childrearing opinion. As with attachment style however, this weak correlation along with the null findings for the PPQ subscales might reflect a less straightforward relationship between the Facilitator orientation and parental conceptions of children. A Facilitator orientation, defined as a more optimistic and flexible baby-focused approach might be expected to provide the context for adaptive, complex and active problem solving in reaction to challenges. However, more extreme positions characterised by idealisation of both mothers and infants could be associated with a more rigid, less adaptive conceptualisation of both parenting and children. Again, future research designs aimed at unravelling these complexities are indicated.

Moreover, for our sample of pregnant women, the Facilitator approach did not simply reflect a more mature perspective. Contrary to expectation, no significant findings emerged for the Perspectivistic-Compensating subscale, which measured the presence of more complex and adaptive parenting views. The low internal consistency for this subscale may

have contributed to this null finding, as well as the fact that many of the participants had not yet experienced parenthood.

**Strengths and Limitations**

Although the Regulator dimension was the most discriminating with respect to adult attachment style and childbearing beliefs, a majority of participants in this sample endorsed a Facilitator orientation. This was particularly so for the PPQ subscales. Despite extended response sets in the current study aimed at increasing the possible range of responses, our findings confirmed the same preference for Facilitator orientation as previously reported (van Bussel, 2009). This may be in part due to social desirability, given social taboos regarding expression of negative feelings about the unborn baby and items on this scale may reflect attitudes more common among clinical samples. Our study sample was also from a relatively high socio-economic background, which may have further contributed to this pattern of results. It is possible that a Regulator orientation may be more characteristic of women from lower socio-economic groups. More conformist views have been noted in lower socio-economic samples (Kohn, 1969) and those lower in socio-economic status have reported less complex and considered parenting beliefs using the Concepts of Development Questionnaire (Sameroff & Feil, 1985). Future research examining more diverse samples of women in pregnancy is needed.

## Conclusions

As a measure of antenatal maternal orientation during pregnancy, the AMOM-R appeared preferable to either the 5-item FRQ (prenatal form) or the refined PPQ subscales (as defined by van Bussel, 2009). The AMOM-R had the most acceptable internal consistency for both subscales, and generated the most results in line with theory, with replication of

previous findings in relation to parity and planned pregnancy, a theoretically plausible relationship with current work status, and meaningful associations with both adult attachment style and childrearing beliefs. The FRQ (prenatal form) showed similar but weaker construct validity, but unacceptable internal reliability. The PPQ subscales showed a different pattern of results, and given the low endorsement of defenses in this study, may yield more informative data with a clinical or less socio-economically protected sample. Nevertheless, findings for all measures do support the fundamental theoretical propositions of Raphael-Leff.

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# CHAPTER 4

## Facilitators and Regulators:

## Infant Sleep Practices and Maternal Subjective Well-Being

Wendy Roncolato and Catherine McMahon

**Published paper.**

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**Author Contributions.** Supervised by Associate Professor Catherine McMahon, I (Wendy Roncolato) managed all aspects of recruitment, website administration, scientific article writing, preparation for journal submission, and journal revisions prior to publication. Statistical analyses were conducted with the help of Dr Alan Taylor. I developed the Infant Sleep Schedules (ISS), and compiled all questionnaires into Qualtrics Research Suite (measures by other authors are acknowledged and referenced).

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## Abstract

***Background.*** The Facilitator orientation, characterised by infant-led caregiving, is proposed to promote immediate responsiveness to the infant coupled with a maternal desire to nurture, whereas the Regulator orientation, typified by a mother-led care regime, is proposed to prioritise infant socialisation and maternal needs. However, empirical research linking maternal orientation to maternal caregiving practices and satisfaction in the mothering role is limited.

***Objective.*** The aim of the current study was to verify whether maternal orientation differences are associated with specific caregiving practices and maternal subjective well-being in accordance with theory.

***Method.*** Two hundred and seventy-four mothers of infants aged 4–7 months answered an online questionnaire to classify maternal orientation, explore caregiving practices specific to infant sleep, and assess each woman's current experience of mothering.

***Results.*** As predicted, more Facilitator tendencies were associated with frequent hands-on infant settling, flexible timing for infant sleeps, and a closer mother-infant proximity at night, even after controlling for demographic influences and feeding type (breastmilk and/or formula). In contrast, maternal orientation did not explain differences in maternal subjective well-being.

***Conclusions.*** Despite differences in caregiving methods, those with more Facilitator or more Regulator tendencies were equally satisfied with their mothering role. A need to tailor support services to each mother's philosophy to babycare is implicated.

## Introduction

Although all babies share basic physiological and emotional needs during infancy, there are considerable individual differences in how mothers approach caregiving, respond to their infants, and experience the mothering role. Raphael-Leff (e.g., 1983, 1985b, 1995, 2009) proposed a theoretical model of maternal orientation to account for these differences. In essence, this theory proposes that the way a woman mothers her baby is an outward expression of deeper underlying intrapsychic processes. Consistent with central theoretical propositions of attachment theory, the model proposes that a woman develops a particular maternal orientation as a result of psychological defenses acquired in response to her own childhood experience of having been mothered. Her maternal orientation then influences the way she conceptualises her baby and herself in the mothering role, and ultimately informs her caregiving preferences.

Raphael-Leff (1983) proposed two distinct profiles: the "Facilitator" and the "Regulator'". These were conceptualised as polar opposite approaches to mothering and in pure form, viewed as extreme stances. The Facilitator is inclined to idealise her infant and believes that infants are capable of meaningful communication from the beginning. Consequently, she aims to adapt completely to her infant's natural rhythm, subjugate her needs to the infant's and follow her infant's lead for the timing and duration of infant feeds. In contrast, the Regulator views young infants as primitive and demanding, with the potential to overwhelm her. As a result, she adopts a mother-led caretaking strategy in order to protect her adult identity by prioritising her own needs. She considers her infant to be asocial and incapable of directing caregiving and adopts a predictable daily routine including set schedules for infant feeds.

Raphael-Leff (1983) further detailed characteristic caregiving practices that tended to cluster around the Facilitator and Regulator poles. Based on clinical observation and small-scale exploratory research (Raphael-Leff, 1985a, 1985b), she proposed that a commitment to longer-term breastfeeding, mother-infant room sharing and active infant settling were aligned with the Facilitator rather than the Regulator profile. Subsequently, she further proposed that the Facilitator approach was one that encouraged attentiveness and immediate responsiveness to the infant including frequent handling and a close proximity to the baby even at night (Raphael-Leff, 2009), whereas the Regulator approach encouraged independence and socialisation in the infant and provided frequent opportunities for the infant to tolerate separateness and learn to self-soothe (Raphael-Leff, 1995).

According to Raphael-Leff (1995), a spectrum of intermediate stances represents more moderate viewpoints. The "Reciprocator" orientation is characterised by a continuous negotiation between maternal and infant needs, and consequently a combination of moderate Facilitator and Regulator caregiving practices. This orientation is considered more adaptive than either the Facilitator or Regulator profiles due to an implicit recognition of the normal ambivalence women experience in the mothering role. A fourth group first identified by Scher and Blumberg (1992) and later termed the "Conflicted" subtype, represents a combination of extreme Facilitator and extreme Regulator views and as such does not fit along the maternal orientation spectrum. While adherence to either extreme is considered potentially maladaptive (Raphael-Leff, 1983), the inherent contradictions in the Conflicted caregiving approach might indicate a deeper underlying confusion and lead to detrimental consequences for both mother and infant (Raphael-Leff, 1995). The characteristics of the Conflicted group are less well defined in the published literature to date.

**Infant Caregiving Practices**

Despite an extensive theoretical base, there is limited empirical support for associations between maternal orientation and caregiving behaviour. Recent research has focused predominantly on more secondary infant and maternal outcomes as a consequence of differences in maternal orientation, including infant night waking (Scher & Blumberg, 1999), infant attachment security (Scher, 2001), and maternal mood or anxiety (Sharp & Bramwell, 2004; van Bussell, Spitz & Demyttenaere, 2009a, 2009b). However, Sharp and Bramwell (2004) have confirmed that the Facilitator orientation is associated with expectations for longer-term breastfeeding, and Scher and Blumberg (1999) examined settling to sleep strategies, but found no associations with maternal orientation.

**Maternal Subjective Well-Being**

Maternal orientation is believed to influence a woman's experience of mothering. Raphael-Leff (1983) proposed that the Facilitator surrenders unreservedly to an idealised notion of motherhood and is therefore primed to experience the mothering role as stimulating, rewarding and enjoyable. In comparison, the Regulator is less enamoured with mothering, viewing the role as potentially boring, depleting, and a barrier to the complete expression of her identity. However, Raphael-Leff has also qualified this position by proposing that Facilitators and Regulators might be equally satisfied with mothering providing that individual circumstances do not enforce mother-infant separateness or togetherness, respectively (Raphael-Leff, 1985b). Further, she suggested that vulnerability to distress related to the different orientations might occur at different times across the transition to motherhood.

A limited number of research studies have explored these theoretical propositions. The Regulator orientation has been associated with lower self-esteem (Raphael-Leff, 1985b) and a higher incidence of depressive symptoms in both the antenatal and postnatal phases (Sharp & Bramwell, 2004; van Bussel et al., 2009a). In comparison, evidence linking maternal orientation with anxiety is more equivocal. Scher and Blumberg (1999) found that maternal separation anxiety was more common among both Facilitators and Regulators when compared with Reciprocators, whereas van Bussel et al. (2009b) found maternal separation anxiety was characteristic of Facilitators and pregnancy-related anxiety was more typical of Regulators.

**Study Aims**

The primary aim of the current study is to provide empirical support for maternal orientation differences in infant caregiving practices and early mothering experiences. We focus in particular on infant sleep and settling. In order to attempt to replicate Raphael-Leff's (1983) original findings, we examine maternal orientation differences in maternal involvement with infant settling and maternal proximity to baby at night. In addition, we examine the use of infant sleep schedules. As maternal orientation is partly defined by differences in preference for feeding on demand or by a schedule, we aim to extend existing research by also examining maternal orientation in relation to maternal preference for sleep schedules. Raphael-Leff (1983) proposed that practices regarding infant sleep were a secondary consequence of attitudes toward infant crying. It is also plausible, however, that maternal differences regarding infant sleep practices are intentional and fundamental to the distinction between Facilitator and Regulator orientations.

Second, we examine the association between maternal orientation and maternal subjective well-being. Although previous research has focused on maternal anxiety and depressive symptomatology, we aim to explore a broader index of maternal well-being by accessing both positive and negative experience. Given that low maternal mood has been associated with lower maternal well-being (Astbury, 1994) and a Regulator orientation (Sharp & Bramwell, 2004; van Bussel et al., 2009a), we expect those of a more Regulator orientation to report lower satisfaction and more difficulty coping with the mothering role than those of a more Facilitator orientation.

**Confounding Influences**

Any differences in caregiving practices and experience of mothering associated with maternal orientation might be explained at least in part by other variables. Given that breastfeeding rather than formula feeding is more prevalent among Facilitators than Regulators (Raphael-Leff, 2009), it is plausible that feeding type alone could account for differences in subsequent parenting methods and infant sleep patterns. Breastfeeding mothers are often encouraged to feed their babies frequently and "on demand" due to the faster digestion of breastmilk compared with formula milk (Sadeh, Tikotzky & Scher, 2010). Frequent breastfeeding also helps to maintain an adequate milk supply (Walker, 2011). Consequently, they may prefer to have their infants closer for ease of night feeding. Indeed, compared with mothers who bottlefeed, mothers who breastfeed more commonly engage in parent-infant bed sharing (Ball, 2007; Blair, Heron & Fleming, 2010; Goldberg & Keller, 2007), and may differ in regard to other parenting strategies. As a result, we aim to control for infant milk feeding type (breastfeeding and/or formula feeding) as a likely confounding variable.

In addition, several demographic variables may be important. For example, maternal comforting and settling techniques may differ depending on infant age (e.g., Scher et al., 1995) and cultural background (Črnčec, Matthey, & Nemeth, 2010; Sadeh et al., 2010). Similarly, preterm birth or work outside the home could lead to early mother-infant separation and preclude certain parenting methods. Given the often unexpected intensity of first-time parenting, primiparous mothers might be at greater risk of lower maternal well-being. The association between Regulator orientation and depressive symptomatology reported in previous research might be explained by the fact that first-time mothers were more likely to endorse a Regulator orientation (Raphael-Leff, 1985b; Roncolato & McMahon, 2011; Scher & Blumberg, 1992, 1999).

**Hypotheses**

In order to test Raphael-Leff's central theoretical proposition, we hypothesised that a woman's maternal orientation would translate directly to her daily infant caregiving methods. We expected that more Facilitator tendencies would be associated with (1) more active maternal involvement when settling baby to sleep, (2) greater flexibility with the timing and duration of infant sleeps, and (3) closer proximity between the mother and baby at night. In addition, despite equivocal findings, we predicted (4) that higher Facilitator tendencies would be associated with a more positive experience of mothering. We examined the impact of maternal orientation while controlling for feeding type and relevant demographic variables, as well as assessing possible interaction effects between maternal orientation and feeding type to determine whether the pattern of associations held, irrespective of feeding type.

## Method

### Participants

Women were eligible for inclusion if they had a singleton baby between four and seven months, had sufficient English, and were currently residing in Australia. Two hundred and seventy-four women meeting these eligibility criteria responded to advertisements requesting participants for an online survey about orientations to mothering: in two Australian mother and baby magazines (*n* = 140, 51.1%), six Australian mother and baby web-based forums (*n* = 87, 31.8%), flyers sent to local childcare establishments and doctors' surgeries (*n* = 39, 14.2%), and Facebook networks (*n* = 8, 2.9%).

### Procedure

After Ethics Committee approval was granted, a password-protected self-administered questionnaire was designed using Qualtrics Research Suite survey creation software (Qualtrics Labs Inc., 2009) to enable online participation. Questions concerned maternal orientation, current methods of infant care and maternal coping and well-being. Both display display-logic and skip-logic commands were applied to individual items so that the questionnaire could be tailored toward each mother's individual experience based on her responses to previous items. For example, women were asked to nominate their current infant feeding type (breastmilk and/or formula), and questions relevant to their experience of breastfeeding, formula or mixed breastmilk/formula feeding followed.

### Measures

***Postnatal maternal orientation***. The Facilitator Regulator Questionnaire (FRQ postnatal form; Raphael-Leff, 2009) classifies maternal orientation using five items and one sub-item: (1) the use of infant caregiving routines, (2a) views on infant feeding schedules,

(2b) the ideal time for weaning, and beliefs about the infant's ability to (3) communicate, (4) socialise and (5) interact. Total scores range from –1 to 16. Low scores reflect a Facilitator orientation and high scores a Regulator orientation. Although criterion scores are offered to allow conversion of FRQ (postnatal form) total scores into discrete categories of orientation (i.e., Facilitator, Reciprocator, Regulator), we chose to define maternal orientation as a dimensional construct to account for within-group differences in accordance with recent research (e.g., van Bussel et al., 2009a, 2009b, 2010). As specified in the scoring rubric, we identified 23 atypical scorers (Conflicted individuals) who had contradictory responses to the first four items (i.e., items 1, 2, 2b, 3), representing both extreme Facilitator and extreme Regulator standpoints. These items contribute to total scores within the mid-range when summed, despite apparent inconsistencies in orientation. Consequently, the total scores for Conflicted individuals cannot be distinguished from those with middle scores reflecting more moderate views when using a dimensional approach. We removed these Conflicted participants from the main analyses because their inclusion could potentially confound the interpretation of findings. As a result, Cronbach's alpha coefficient increased from .55 ($N$ = 274) to .60 ($N$ = 251).

***Infant sleep practices.*** We examined three indices of mothering style related to infant sleep: infant settling methods, use of infant sleep schedules, and proximity to the baby at night. Infant settling methods were assessed using the Parental Interactive Bedtime Behaviour Scale (PIBBS; Morrell & Cortina-Borja, 2002). The measure presents 17 infant settling strategies commonly used by parents to encourage their infants to sleep. Frequency of use for each strategy is assessed along a 5-point scale from *never* (0) to *very often* (4). As the PIBBS was originally developed for one- to two-year-olds, wording was changed from

"child" to "baby" to be appropriate for mothers of younger infants. We considered the factor structures of Morrell and Cortina-Borja, and also an alternate 4-factor structure developed with mothers of four-month-old infants (Cronin, Halligan & Murray, 2008). Perhaps due to infant age-related and/or cultural differences, we were unable to replicate either factor structure for the current sample. Given we were most interested in a general concept of mothers' involvement at sleep time, we opted for a forced one-factor solution, using the maximum likelihood method with oblimin rotation. This analysis resulted in 11 items that all contributed to a high Cronbach's alpha of .80 (see Appendix F). All items assessed tendency to intervene (e.g., "Cuddling or rocking in arms" and "Give a feed/drink"). Only one item, "Leave to cry", was reverse-coded. Scores were combined for a total score, and higher scores reflected more frequent use of infant settling strategies involving maternal intervention.

Infant Sleep Schedules (ISS) was a 5-item measure developed specifically for the purposes of the current study and assesses the degree to which mothers follow their infant's own timing for sleeps, or intervene to encourage a more predictable pattern. Item wording was adapted from maternal orientation differences in infant feeding practices (Ekström, Matthiesen, Widström, & Nissen, 2005; Raphael-Leff, 2009). Three items represent a Facilitator position (e.g., "My baby sleeps without regard to any time schedules") and two signify a Regulator position (e.g., "I have set times for my baby's sleeps"). Responses indicate frequency of occurrence along a 5-point scale of *never* (0) to *always* (4). Regulator items are reverse-coded so that low scores suggest a more flexible approach to the timing and management of infant sleep and high scores reveal a preference for a more scheduled approach, consistent with the FRQ (postnatal form). For the current sample, all five items

loaded on a single factor using the maximum likelihood method with oblimin rotation, and internal consistency was high ($\alpha$ = .85).

To measure mother-infant proximity at night, participants were asked if they slept in the same room as their infant and if they shared a bed (co-slept) at any time over the past month. Both responses were gauged along a 3-point response set of *always* (0), *sometimes* (1) or *never* (2).

***Maternal subjective well-being.*** The Experiences of Motherhood Questionnaire (EMQ; Astbury, 1994) measures the self-reported coping and emotional well-being of mothers of young children. The 20-item scale is comprised of 10 items describing positive aspects of motherhood (e.g., "I have greater confidence since becoming a mother") and 10 items concerning the negative, stressful aspects (e.g., "I feel run down"). Each item is answered along a 4-point scale from *not at all* (1) to *very much so* (4). Positive items were reverse-coded, and all items are summed to produce a total score. Higher scores reflect less satisfaction and more difficulty coping in the mothering role. Internal consistency of the scale for the current sample was high ($\alpha$ = .81).

**Confounding Variables**

Demographic variables of interest included maternal age, relationship status (married/defacto vs. single), cultural background (Caucasian vs. other), parity (one, two, three or more children), education (secondary school, undergraduate, postgraduate), current work status (no paid work vs. paid work), baby age (months), gender and prematurity (full term vs. premature). In addition, mothers were asked to specify their current infant feeding type (breastmilk exclusively, breastmilk plus formula milk, formula exclusively), and whether their infant had started solid foods (solids vs. no solids).

**Data Analysis**

Data were transferred from the Qualtrics Research Suite (Qualtrics Labs Inc., 2009) to IBM SPSS Statistics (IBM, 2009) for statistical analysis. For each variable, distributions were inspected. No residuals deviated significantly from normality. For all hypotheses, we examined univariate associations (ANOVA with Scheffe adjustment or correlations) between the FRQ (postnatal form) and outcome measures prior to controlling for possible confounding variables. For subsequent regression analyses, we used a conservative approach and included all demographic variables and feeding variables as potential covariates. We employed hierarchical linear regression for dimensional dependent variables (PIBBS, ISS and EMQ scores) and incremental logistic regression analyses for categorical dependent variables (mother-infant room sharing and co-sleeping), partialling out the effect of demographic differences (entered at Step 1), and infant feeding variables comparing breastmilk and/or formula feeding, and solids or no solids (Step 2), to examine the influence of maternal orientation (Step 3). Finally, we tested whether relationships between maternal orientation and the various outcome measures were moderated by feeding type, by entering the interaction effect between feeding type (breastmilk and/or formula) and maternal orientation (Step 4). We examined odds ratios (OR) and increase in the chi-square statistic with each increment of the logistic regression model, or regression coefficients and the change in variance at each step of the linear regression model, to determine the impact of the variables entered. Given that we conducted multiple analyses, a conservative alpha was adopted ($p < .01$).

# Results

## Participant Characteristics

The majority of the women were married or in a de facto relationship (*n* = 265, 96.7%), Caucasian (*n* = 243, 88.7%), not currently in paid employment (*n* = 185, 67.5%) and had attained a tertiary (undergraduate or postgraduate) degree (*n* = 194, 70.8%). Maternal age ranged from 22 to 49 years (*M* = 33.52, SD = 4.57) and most mothers were primiparous (*n* = 171, 62.4%). Babies were between the ages of four and seven months (*M* = 5.24 months, *SD* = .97); 51% (*n* = 135) were female and 4.4% were born prematurely (*n* = 12, < 37 weeks). Reported feeding was as follows: breastfeeding (*n* = 174, 63.5%), formula feeding (*n* = 67, 24.5%) and breastmilk plus formula feeding (*n* = 33, 12.0%).

## Infant Sleep Practices

***Infant settling methods and sleep schedules.*** As predicted, lower FRQ (postnatal form) scores (indicating more Facilitator tendencies) were associated with greater maternal involvement in settling (PIBBS; *r* = –.48, *p* = .00) and less reliance on set times and schedules for infant sleep (ISS; *r* = .61, *p* = .00). When linear regression analyses were conducted to partial out the effects of demographic and infant feeding variables, the associations remained significant (Table 4.2). No demographic variables, feeding variables or interaction effects explained any additional variance in either parenting practice.

***Mother-infant proximity (room sharing, co-sleeping).*** As expected, a closer proximity between mother and infant at night was associated with lower FRQ (postnatal form) scores, indicating a more Facilitator orientation (Table 4.1). Mothers who always shared a room with their baby had significantly lower FRQ (postnatal form) scores than those who never shared a room with their baby, but FRQ (postnatal form) scores were not significantly different from

women who shared a room sometimes. In relation to co-sleeping, mothers who always co-slept with their babies had significantly lower FRQ (postnatal form) scores than did those who sometimes co-slept or those who never co-slept. Furthermore, the majority of mothers who consistently maintained a closer proximity to their babies at night were breastfeeding exclusively.

Table 4.1

*Maternal Orientation Differences for Categorical Infant Sleep Variables (N = 251)*

| | | FRQ (postnatal form) | | | | Scheffe contrasts | | |
|---|---|---|---|---|---|---|---|---|
| | | *n* | *M* | *SD* | *F* | 1v2 | 2v3 | 1v3 |
| Shared room | Always | 99 | 4.23 | 2.91 | 21.73* | –1.07 | –1.78 | –2.85* |
| | Sometimes | 30 | 5.30 | 3.46 | | | | |
| | Never | 122 | 7.08 | 3.40 | | | | |
| Co-sleep | Always | 16 | 2.94 | 3.34 | 21.03* | –.89 | –2.72* | –3.61* |
| | Sometimes | 53 | 3.83 | 2.81 | | | | |
| | Never | 182 | 6.55 | 3.33 | | | | |

*Note:* Of the 99 mothers who always shared a room with their babies, the majority (*n* = 70, 70.7%) were breastfeeding exclusively. Likewise, of the 16 mothers who always co-slept with their babies, 12 (75.0%) of those were breastfeeding exclusively. *$p \leq .01$.

Table 4.2

*Odds Ratios (99% Confidence Interval) for Incremental Logistic Regression and Coefficients[a] (99% Confidence Interval) for Hierarchical Linear Regression related to Infant Sleep Practices and Maternal Subjective Well-Being (N = 251)*

| | | | Mother-Infant Proximity | | |
|---|---|---|---|---|---|
| | Settling methods (PIBBS)[b] | Sleep schedules (ISS)[b] | Shared room[c] | Co-Sleep[c] | Maternal well-being (EMQ)[b] |
| Step 1: Demographics | $F(11, 238) = 1.94$<br>$R^2 = .08$ | $F(11, 238) = 1.06$<br>$R^2 = .05$ | $\chi^2(11) = 21.51$ | $\chi^2(11) = 21.65$ | $F(11, 238) = 1.35$<br>$R2 = .06$ |
| Step 2: Feeding variables | $F(3, 235) = 3.48$<br>$R^2\Delta = .04$ | $F(3, 235) = 3.57$<br>$R^2\Delta = .04$ | $\chi^2(3) = 11.97$* | $\chi^2(3) = 19.18$* | $F(3, 235) = .82$<br>$R^2\Delta = .01$ |
| Feeding type | $F(2, 235) = 3.02$ | $F(2, 235) = 2.55$ | $\chi^2(2) = 9.38$* | $\chi^2(2) = 12.57$* | $F(2, 235) = .92$ |
| Mixed[d] vs. breastmilk (ref) | –2.47 [–6.61, 1.67] | 1.00 [–1.51, 3.51] | 2.07 [.72, 6.00] | 2.23 [.61, 8.19] | 1.86 [–2.17, 5.89] |
| Formula vs. breastmilk (ref) | –2.87 [–6.21, .48] | 1.71 [–.31, 3.74] | 2.53 [1.06, 6.04]* | 5.77 [1.60, 20.72]* | –.39 [–3.63, 2.86] |
| Solids | | | | | |
| No solids vs. solids (ref) | –2.21 [–5.89, 1.48] | 1.64 [–.59, 3.87] | .66 [.26, 1.65] | .53 [.18, 1.60] | .81 [–2.77, 4.39] |
| Step 3: Maternal Orientation | $F(1, 234) = 56.56$* | $F(1, 234) = 131.62$* | $\chi^2(1) = 29.75$* | $\chi^2(1) = 26.27$* | $F(1, 234) = 1.56$ |
| Facilitator Regulator | $R^2\Delta = .17$* | $R^2\Delta = .33$* | | | $R^2\Delta = .01$ |
| Questionnaire (FRQ) | –.46 [–.62, 0.30]* | .63 [.49, .78]* | 1.27 [1.13, 1.43]* | 1.32 [1.13, 1.55]* | –.09 [–.27, .09] |
| Step 4: Interactions | $F(2, 232) = .17$ | $F(2, 232) = 1.52$ | $\chi^2(2) = 1.93$ | $\chi^2(2) = 5.29$ | $F(2, 232) = 1.55$ |
| | $R^2\Delta = .00$ | $R^2\Delta = .01$ | | | $R^2\Delta = .01$ |
| Feeding type x MO | | | | | |
| Mixed vs. breastmilk x MO | .08 [–.28, .43] | .08 [–.25, .40] | 1.22 [.80, 1.86] | .89 [.57, 1.38] | –.26 [–.67, .14] |
| Formula vs. breastmilk x MO | –.01 [–.36, .38] | .22 [–.11, .55] | .99 [.76, 1.28] | .71 [.49, 1.04] | .01 [–.41, .43] |

*Note:* PIBBS = Parental Interactive Bedtime Behaviour Scale; ISS = Infant Sleep Schedules; EMQ = Experiences of Motherhood Questionnaire. [a]Standardised coefficients are presented for numeric independent variables and unstandardised coefficients are presented for categorical independent variables. [b]Numeric dependent variables. [c]Categorical dependent variables, reference category = never (2). [d]Mixed refers to use of both breastmilk and formula. $\chi^2$ = Wald statistic, *p ≤.01.

When logistic regression analyses were conducted to partial out the effects of demographic and infant feeding variables, the association between maternal orientation and both aspects of proximity (room sharing and co-sleeping) remained significant (Table 4.2). Demographic variables did not account for significant differences in these caregiving practices, with the exception of current work status. Those in paid employment (full- or part-time) were more likely to share a bed with their infant than those who were not working, (OR = 3.14 [1.44 – 6.83], $p \leq .00$). Regarding infant feeding, those breastfeeding exclusively were more likely to share a room with their baby and more likely to co-sleep with their baby than formula feeders (see Table 4.2). No interaction effects were significant.

**Maternal Subjective Well-Being**

Overall sample scores for the EMQ ($M$ = 37.19, $SD$ = 7.72) were similar to, although somewhat more optimal, than reported norms ($M$ = 40.18, $SD$ = 8.35; Astbury, 1994) suggesting that the evaluations of women in our sample were comparable to the larger population of Australian mothers. In contrast to the above findings for infant caregiving, the correlation between maternal orientation and subjective experience of mothering was not significant ($r$ = –.02, $p$ = .73). This null finding remained when demographic and feeding differences were taken into account (see Table 4.2). No other variable, entered at earlier steps in the model, accounted for any significant variance in experience of mothering.

## Discussion

Maternal orientation is a theoretical construct proposed to explain a broad range of differences in mothering approach which impact directly on caregiving practices and mothering experiences. However, empirical support for these premises is limited. This study aimed to replicate the original findings of Raphael-Leff (1983) by confirming maternal

orientation differences in maternal practices regarding infant sleep including maternal involvement in settling and mother-infant proximity, and also to extend existing research by examining maternal use of infant sleep schedules. Furthermore, we examined whether maternal orientation was associated with maternal subjective well-being. All relationships were considered whilst taking account of relevant confounding variables.

As expected, maternal orientation was significantly associated with infant sleep practices even after controlling for the potentially confounding effects of infant feeding type and demographic characteristics. However, contrary to prediction, maternal orientation classification did not explain differences in mothers' evaluations of well-being.

**Infant Sleep Practices**

Current findings confirmed Raphael-Leff's (1983) earlier reports related to maternal orientation differences in maternal settling behaviours and mother-infant sleep proximity. Women with more Facilitator tendencies engaged in active hands-on settling strategies with greater frequency than did those with more Regulator orientation. Similarly, mothers with more Facilitator tendencies were significantly more inclined to share a room and a bed with their infant than were those with more Regulator tendencies. In relation to sleep schedules, as predicted, those with more Facilitator tendencies were less inclined to endorse strict times for infant sleep than those with more Regulator tendencies. The current study makes a unique contribution by demonstrating that maternal involvement at sleep times, mother-infant proximity and reliance on sleep schedules were not explained solely by whether the mother was breastfeeding or other demographic differences (e.g., paid work), but rather appear to be a function of a mother's parenting philosophy.

**Maternal Subjective Well-Being**

Contrary to prediction, maternal well-being was similar for those with a more Facilitator than Regulator orientation, suggesting that Facilitators and Regulators are equally susceptible to the highs and lows of caring for a young infant. It is possible that these findings may be specific to the age of the infants in the study (4–7 months). Facilitators and Regulators have different vulnerabilities, which may be triggered at specific times (Raphael-Leff, 1985b). However, van Bussel et al. (2009a) found that women with Regulator tendencies reported consistently higher depressive symptomatology at several measurement points including at six-months postpartum when compared with Facilitators. Direct comparisons across studies are constrained, however, by differences in timing of assessment of maternal orientation (van Bussel et al. classified maternal orientation antenatally prior to postnatal mood assessment), by different content in the measures used to define maternal orientation across studies (Roncolato & McMahon, 2011), different sample characteristics and the fact that the current study did not assess depressed mood.

The lack of association between maternal orientation and maternal subjective well-being, coupled with average to above average maternal satisfaction scores, may reflect the fact that most women in the current study felt well-supported within their chosen mothering philosophy. Raphael-Leff (1985b) proposed that the risk of postnatal distress would increase for women who were challenged by circumstances that dictated their mothering style; for instance, an earlier than desired return to work in the case of the Facilitator, or extended leave from valued employment for the Regulator. Therefore, these null findings do not necessarily undermine maternal orientation theory.

**Strengths and Limitations**

A major strength of the current study was the exclusion of several possible confounding influences when examining relationships among maternal orientation, parenting practice and maternal subjective well-being. Worthy of brief comment are findings related to the impact of feeding type (breastmilk and/or formula) and paid work on infant sleep practices. Breastfeeding was associated with certain caretaking strategies. Closer sleep proximity between mothers and infants was noted for mothers whose infants were breastfed exclusively, in concordance with several others studies (e.g., Ball, 2007; Blair, Heron & Fleming, 2010; Goldberg & Keller, 2007). Women who engaged in paid work were significantly more likely to co-sleep with their babies, consistent with other reports regarding working mothers (Ball, 2002; McKenna & Volpe, 2007) and it has been suggested that this may be a means of mothers achieving close contact with their babies to offset separation due to work (Ball, 2002). It is also plausible that mothers who are working choose to co-sleep with their babies for pragmatic reasons. Orientation might be disregarded if co-sleeping offers less interruption to maternal sleep when mothers need to be productive at work the next day.

Nonetheless, several limitations need to be taken into consideration in interpreting the study findings. A prospective longitudinal design would enable some separation among evaluations of orientation, caretaking practices and maternal well-being, reducing the possibility of bias from concurrently administered questionnaires. It is not possible, given the cross-sectional design, to draw conclusions regarding whether it is maternal orientation that determines caregiving practices. Furthermore, despite an adequate sample size, the women in the study were predominantly Caucasian, partnered, well educated with few babies born

preterm. These sample characteristics may explain the relatively optimal satisfaction levels reported compared with previously published data. With such a homogeneous group of mothers, our ability to detect broader cultural and demographic differences was likely limited and the number of mothers experiencing substantial adjustment problems was quite low. Furthermore, the study relied on self-report data inviting possible discrepancy between reported and actual infant caregiving behaviours. Ideally, parenting practices would be observed and rated via independent assessment.

A further contribution of the current study concerned the psychometric properties of the 5-item Facilitator Regulator Questionnaire. Reliability is documented for the first time with a postnatal sample. The internal consistency of the measure was $\alpha$ = .55, and increased marginally when Conflicted individuals were excluded ($\alpha$ = .60). This result represents a substantial improvement when compared to its use with an antenatal population ($\alpha$ = .41; Roncolato & McMahon, 2011) and from the original 3-item postnatal scale ($\alpha$ = .21; Scher & Blumberg, 1992).

**Future Research**

The relationship between maternal orientation and maternal subjective well-being could well be more complex than that considered in the current study. Maternal orientation might moderate the influence of other factors on maternal well-being, such as access to practical and emotional support or frequency of infant night waking. In a demographically similar sample of Australian mothers, Emmanuel, Creedy, St John, Gamble and Brown (2008) found that a woman's adaptation to her maternal role was primarily influenced by the extent of her social support. However, what a mother perceives as adequate support could in part depend on her maternal orientation. Whereas the Facilitator prefers a close confidant (i.e.,

her own mother or partner) to provide emotional and practical support as she nurtures her infant, the Regulator is amenable to accepting outside practical assistance to enable separation from her infant, freeing her to occupy other roles (Raphael-Leff, 1995). Certainly, maternal orientation theory includes a detailed account of interrelationships with partners (Raphael-Leff, 1995, 2009), beyond the scope of the current paper.

Despite advances in the reliability of the FRQ (postnatal form), we argue that further development of the measure is warranted. An alternative design could reduce the time taken to devise a total score and classify orientation, given that the first item related to infant caregiving routines requires classification from open-ended responses and identifying Conflicted individuals is currently a laborious exercise. Additional items that aim to explore infant settling methods, mother-infant nighttime proximity and infant sleep schedules could be included as defining criteria, as well as parental cognitions about caregiving practices that could elucidate underlying motivations related to orientation. In its current form, the Facilitator Regulator Questionnaire defines maternal orientation predominantly by attitudes to caregiving and perception of infant capabilities. Therefore, we cannot deduce that mothering style is an outward expression of underlying intrapsychic processes as theorised, based on the current findings.

Maternal orientation is believed to emerge as a consequence of childhood experience and to be relatively stable across the perinatal transition, however to date there is no empirical evidence for stability. A mother's choice of parenting style could reflect both her current circumstances and her network of social influence, either of which may conflict with her innate disposition (Cochran & Niego, 1995). Although, Raphael-Leff (1985a, 1995, 2009) acknowledges circumstantial influence and pressure from parenting "experts", these

influences do not currently occupy a definitive place in theory. Further research could test whether an interplay exists between present and past dynamics to determine subsequent parenting methods.

## Conclusions

Maternal orientation was found to predict certain styles of mothering as originally proposed by Raphael-Leff (1983) but not maternal subjective well-being. Mothers with a tendency toward either maternal orientation may be equally satisfied provided the caregiving approach fits with infant temperament and is supported by those around them. Whatever the maternal approach, professionals attending to the emotional, physical and practical needs of mothers would do best to take account of a mother's orientation rather than prescribing one "right way" of mothering for all.

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# CHAPTER 5

## Facilitators and Regulators:

## Antenatal Maternal Orientation and Postnatal Parenting Practices

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**Author Contributions.** I (Wendy Roncolato) was an integral part of the Perinatal Regulation and Mood Study (PRAMS) research team, responsible in part for recruitment, the design of questionnaires (all original authors of pre-existing measures are referenced) and assisted with the collection of data. Under the guidance of Associate Professor Catherine McMahon, I was responsible for the production of this manuscript and conducted statistical analyses with the assistance of Dr Alan Taylor.

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## Abstract

***Background.*** Two distinct maternal childcare orientations (Facilitator/Regulator), present prior to birth, have been proposed to explain individual differences in mothering behaviour (Raphael-Leff, 1983).

***Objective.*** This study examined prospectively whether maternal orientation in pregnancy predicted maternal orientation and mothering practices postpartum.

***Method.*** At 32 weeks gestation, 192 mothers completed two questionnaire measures assessing maternal orientation. At 6-months postpartum, maternal orientation and maternal caretaking behaviours were assessed by interview and questionnaire.

***Results.*** Bivariate analyses indicated small but significant correlations among measures of antenatal and postnatal maternal orientation. In addition, lower Regulator scores in pregnancy were associated with greater likelihood of breastfeeding exclusively, less scheduling of infant feeds and sleeps, and less likelihood of leaving baby to cry to sleep at 6-months postpartum. The latter two findings remained significant even when accounting for diverse contextual factors such as birth and infant milk feeding type. Associations were found between mother-infant nighttime proximity and postnatal, but not antenatal, maternal orientation.

***Conclusions.*** Findings offer modest support for the stability and construct validity of maternal orientation assessed in pregnancy and reveal antenatal attitudinal factors that influence maternal caregiving trajectories.

## Introduction

Maternal orientation is a theoretical concept proposed to explain a woman's approach to motherhood and her parenting choices (e.g., Raphael-Leff, 1983, 1985a, 1985b, 1986, 1995, 2009). The theory explores differences in a woman's underlying intrapsychic defenses, cognitions and beliefs about motherhood, and perceptions of her infant, that are postulated to underpin individual differences in mothering behaviour.

Raphael-Leff (1983) proposed two opposing maternal orientations, the "Facilitator" and the "Regulator", as end points on a spectrum of possible mothering approaches. In brief, Facilitators have a preference for following the baby's lead, whereas Regulator mothers prefer to have the baby fit within a predetermined routine. These two maternal orientations are believed to derive from different defensive positions; the Facilitator, prone to idealisation of motherhood, encourages mother-infant closeness and infant dependency, whereas the Regulator, motivated by a desire to protect her own identity, uses a range of caregiving methods to promote infant independence and minimise demands for maternal care. However, many women occupy middle positions along the spectrum indicating more moderate and flexible viewpoints and are termed "Reciprocators". Lastly, "Conflicted individuals" (Raphael-Leff, 2009) are those who hold co-existing and contradictory, extreme Facilitator and extreme Regulator views. For detailed reviews of maternal orientation theory, see Raphael-Leff (2009), Roncolato and McMahon (2011, 2013) and Sharp and Bramwell (2004).

Although not explicitly proposed as a trait, maternal orientation is assumed to be largely stable across the transition from pregnancy to early motherhood within each childrearing experience (Raphael-Leff, 1986, 2009). However, no research has attempted to

validate this claim. The first aim of the current study was to examine whether a woman's antenatal maternal orientation is associated with her postnatal maternal orientation.

A central proposition of the theory is that maternal orientation in pregnancy influences parenting behaviors after birth. Postnatal maternal orientation has been shown to be concurrently associated with postnatal caregiving methods in accordance with theory (Raphael-Leff, 1983; Roncolato & McMahon, 2013). Specifically, mothers who reported more Facilitator tendencies also reported following their infant's cues regarding infant sleeps and a closer proximity to the baby at night, even after differences in milk type (breastmilk and/or formula) and demographic variables were taken into account (Roncolato & McMahon, 2013). However, the cross-sectional design of the study precluded conclusive interpretations regarding whether maternal orientation *determined* caregiving behaviour. It is plausible that the reverse might also be true: postnatal caregiving practices may influence a mother's report of her maternal orientation. In the current study, we use a longitudinal design to extend this work and test whether a woman's maternal orientation in pregnancy predicts her childrearing methods postpartum, specifically focusing on how she manages her infant's feeds and sleeps. Accordingly, the second aim of the study was to assess whether maternal orientation in pregnancy predicts caregiving practices once the infant is born.

We sought to first explore the link between maternal orientation and infant milk feeding type. Most mothers in Australia initiate breastfeeding soon after birth (92.3%; Australian Bureau of Statistics, 2011–12) in line with World Health Organization (WHO) guidelines and breastfeeding-friendly initiatives (WHO, 2009). Fewer, however, will maintain breastfeeding exclusively (without the introduction of formula milk) in the first six months (17.6%; Australian Bureau of Statistics, 2011–12). Although Raphael-Leff's theory (1983,

2009) refers to the scheduling of infant feeds rather than infant milk type, she also acknowledges that Regulators may be distinguished from Facilitators by the early introduction of formula milk to enable shared babycare (Raphael-Leff, 2009).

Breastfeeding has been linked with specific caregiving practices including feeding "on demand" due to the faster infant digestion of breastmilk when compared to formula milk (Sadeh, Tikotzky, & Scher, 2010), the infant's ability to regulate intake due to appetite-inhibiting proteins in breastmilk (Khan et al., 2013) and to encourage adequate maternal milk supply (Walker, 2011). Breastfeeding has also been linked with a closer mother-infant proximity overnight (Ball, 2007; Blair, Heron, & Fleming, 2010; Roncolato & McMahon, 2013). The process of breastfeeding alone could, therefore, directly influence the timing of feeds as well as nighttime sleeping arrangements. For this reason, we control for milk feeding type when investigating other infant care practices. Likewise, we take account of the experience of birth. Raphael-Leff (1995) describes the Facilitator's preference for a natural unaided birth, in contrast with the Regulator's inclination toward a medically assisted birth with analgesia. Whether these birth plans are realised or not could further strengthen or weaken a mother's resolve for specific caregiving plans.

**Hypotheses**

We predicted that (1) antenatal maternal orientation would be associated with postnatal maternal orientation, (i.e., Facilitator or Regulator tendencies in pregnancy would persist post-birth), and (2) women with a more Facilitator orientation in pregnancy would report: (a) higher rates of breastfeeding exclusively at 6-months postpartum, (b) more flexibility regarding the timing of infant feeds and sleeps, (c) closer proximity to their infants at night, and (d) a reluctance to leave infants to cry to sleep. We controlled for the following

potentially confounding variables: maternal age, language background, education, parity, conception through Assisted Reproductive Technology (ART), infant gender, gestational age at birth, birth type and postpartum work status for all prospective analyses investigating parenting practices, and as noted above, infant milk feeding type (breastmilk and/or formula) for all analyses, with the exception of predicting the direct effect of antenatal maternal orientation on milk feeding type.

## Method

### Participants

After gaining approval from relevant institutional ethics committees, pregnant women in their third trimester of pregnancy were recruited at antenatal childbirth education classes, antenatal clinics and a perinatal psychiatry clinic within three Sydney metropolitan hospitals. Inclusion criteria were that the women were expecting a singleton baby, had sufficient English to complete questionnaires and interviews, and were between 28- and 32-weeks gestation. In total, 361 women expressed interest and agreed to be contacted by phone to discuss participant requirements; 218 (60.4%) gave written consent to participate.

### Procedure

At Time 1 (T1 pregnancy, 32-weeks gestation), women completed an online questionnaire developed using Qualtrics Research Suite software (Qualtrics Labs Inc., 2009) to collect demographic information and evaluate antenatal maternal orientation. They completed a second online questionnaire at Time 2 (T2 postpartum, 6-months post-birth) to assess postnatal demographic information, postnatal maternal orientation, and the scheduling of infant feeds and sleeps. Additionally, mothers took part in a structured telephone interview at T2 postpartum to document their experiences of childbirth, infant

feeding type (breastmilk and/or formula), mother-infant sleeping arrangements, settling methods, and whether they would leave their baby to cry on occasion. Interviewers used Computer Assisted Personal Interviewing (CAPI; Nova Research Company, 2009) to input participant responses in a standardised way. Information regarding the birth was collected retrospectively.

**Maternal Orientation Measures**

Maternal orientation in pregnancy (T1) was assessed using two questionnaires: the revised Placental Paradigm Questionnaire Facilitator and Regulator subscales (PPQ; Raphael-Leff, 2009; van Bussel, 2009) and the Antenatal Maternal Orientation Measure (AMOM; Sharp & Bramwell, 2004) modified as recommended by Roncolato and McMahon (2011; AMOM-R). The PPQ subscales aim to access intrapsychic processes underlying maternal orientation, whereas the AMOM-R assesses conscious mothering expectations and caregiving plans. Post-birth (T2), the Facilitator Regulator Questionnaire (FRQ postnatal form; Raphael-Leff, 2009) was used to assess postnatal maternal orientation.

***Maternal orientation (T1, pregnancy).*** The *Antenatal Maternal Orientation Measure* (AMOM-R; Roncolato & McMahon, 2011) comprised 18 items divided into two subscales: a Facilitator scale (10 items) and a Regulator scale (8 items). In the original AMOM measure (Sharp & Bramwell, 2004), a Facilitator and a Regulator orientation were paired at opposite end points along a single scale, and respondents were forced to choose a position toward one and necessarily away from the other, or to take a middle position. In the AMOM-R, each of the Facilitator and Regulator endpoints was separated to form two items: a Facilitator and a Regulator item. Considering the Facilitator and Regulator orientations separately allowed for the possibility of holding both a Facilitator and a Regulator position simultaneously, in

accordance with the findings of Scher and Blumberg (1992). All items in the AMOM-R maintain the original wording from the AMOM.

Items that did not contribute positively to the internal reliability of either scale were removed from the final AMOM-R measure. The AMOM-R Facilitator scale assessed a pregnant woman's expectations of her baby (2 items; e.g., "My baby will be like someone that I already know"), her expected mothering experience (5 items; e.g., "I will be mostly enjoying the new way of life"), and her future infant feeding plans (3 items; e.g., "To begin with, I intend to feed my baby on demand"). The Regulator scale followed the same format, with items describing a woman's expectations of her baby (2 items; e.g., "My baby will be like a stranger at first"), her expected mothering experience (3 items; e.g., "I will be mostly feeling trapped") and her infant feeding plans (3 items; e.g., "To begin with, I intend to feed my baby at set times"). Higher scores on each subscale indicate a greater tendency toward that orientation. For the current study, we extended the response set to include a neutral response option within a 7-point scale which ranged from *strongly disagree* to *strongly agree*.

The *Placental Paradigm Questionnaire* (PPQ; Raphael-Leff, 2009) is a 28-item questionnaire, developed as a screening tool to detect specific antenatal emotional disturbance, as well as psychoanalytic defenses of idealisation, persecution, obsession and detachment. A subset of items measure Facilitator and Regulator orientation, indexed primarily by idealisation and persecutory ideation, respectively. For this study, we adopted the reduced 5-item Facilitator and 5-item Regulator scales validated by van Bussel (2009), and following his recommendation, we extended response options from the original 4-point rating to a 7-point response set. Facilitator orientation items assess tendency to idealise pregnancy, (e.g., "Pregnancy is the peak of my female experience"), whereas Regulator items

assess the presence of persecutory thought, (e.g., "The baby seems like an intruder or parasite"). Although the PPQ subscale was originally designed so that low scores on all subscales indicated a Facilitator and high scores a Regulator tendency, we reverse-coded the Facilitator scale so that results could be directly compared with van Bussel's work. As a result, high scores on each subscale reflected a higher Facilitator or Regulator orientation, respectively.

***Maternal orientation (T2, postpartum).*** The *Facilitator Regulator Questionnaire* (FRQ postnatal form; Raphael-Leff, 2009) defines a woman's approach to mothering her infant along the spectrum of possible maternal orientation standpoints from Facilitator to Regulator. Five items and one sub-item assess (1) the use of infant caregiving routines, (2a) views on infant feeding schedules, (2b) the ideal time for weaning, and beliefs about the infant's ability to (3) communicate, (4) socialise and (5) interact. Using a dimensional approach, the sum of all items produces a total score ranging from –1 to 16, which gives an indication of a mother's tendency toward (and away from) either of the Facilitator or Regulator extremes. Low scores indicate a Facilitator orientation whereas high scores denote a Regulator orientation.

**Infant Caregiving Practices**

***Infant feeding type.*** Mothers were asked to indicate their infant's current milk feeding type: breastmilk only, mainly breastmilk, about half and half breastmilk and formula, mainly formula and formula milk only. Responses were recoded to produce a dichotomous variable: breastmilk only (0) and formula feeding (1); the latter category representing feeding practices including exclusive formula feeding or breastfeeding complemented by formula milk. Whether infants had started solid foods was coded as: no (0) or yes (1).

***Scheduling of infant feeds and sleeps.*** Two 5-item scales were developed for the current study. Infant Feeding Schedules (IFS) and Infant Sleep Schedules (ISS) assessed the degree to which mothers intervened to encourage their infant to feed and sleep at set times. Items evolved from the work of Raphael-Leff (2009) and Ekström, Matthiesen, Widström, and Nissen (2005) and were based on maternal orientation differences in infant feeding. For the IFS, three items were consistent with a Facilitator orientation, (e.g., "I feed my baby 'on demand' without regard to any time schedules"), and two reverse-coded items were indicative of a Regulator orientation, (e.g., "I feed my baby on a set schedule, i.e., 3–4 hourly"). Similarly, three items from the ISS represented the Facilitator approach (e.g., "My baby is permitted to sleep for as long as he or she wants") and two reverse-coded items reflected the Regulator approach (e.g., "I discourage my baby from having small naps between other sleeps"). Lower scores were consistent with a flexible (Facilitator) approach to the timing of infant feeds or sleeps, whereas higher scores indicated a tendency to schedule feeds or sleeps at set times (Regulator).

***Mother-infant proximity (room sharing, co-sleeping).*** *Mothers were asked where their infant usually slept most of the night, either: in the* same room *as them (0), or in a* separate room *(1), and secondly, how often their infant slept the night in the parent bed:* more often than not *(0),* occasionally *(1),* never *(2).*

***Infant settling practices (leave to cry).*** *Mothers were asked whether they had ever tried leaving their infant to "cry it out", coded as* no *(0),* yes, once *(1),* yes, a few times *(2),* yes, often *(3).*

**Confounding Variables**

Demographic information collected in pregnancy included maternal age (years),

marital status (married/de facto vs. single), language spoken at home (English only vs. English plus other), education (secondary school vs. tertiary), parity (expecting first baby vs. previous children), use of Assisted Reproductive Technology (ART; medically assisted conception vs. unassisted conception), and postnatally included baby gender, gestational age at birth (weeks), birth type (vaginal unassisted vs. vaginal assisted/caesarean section), postpartum work status (no paid work vs. paid work), infant milk feeding type (breastmilk exclusively vs. formula milk exclusively/breastmilk plus formula), and the introduction of solid foods (yes vs. no).

**Data Analysis**

We transferred data from the Qualtrics Research Suite (Qualtrics Labs Inc., 2009) to IBM SPSS statistics (IBM, 2012). ANOVA and chi-square analyses were used to explore demographic differences between those who completed all data requirements and those who discontinued after T1 (pregnancy). Participant characteristics are presented for the final sample in Table 5.1. Psychometric properties, including internal consistencies using Cronbach's alpha coefficient, are documented for all dimensional variables (AMOM-R, PPQ subscales, FRQ postnatal form, IFS, ISS), and the unique conditions for the PPQ Regulator scale and the FRQ (postnatal form) explained. To explore the first hypothesis, Pearson correlation coefficients (*r*) were used to examine associations among antenatal and postnatal maternal orientation. In relation to the second hypothesis, we assessed the association between postnatal maternal orientation and postnatal mothering practices prior to examining the prospective relationship between antenatal maternal orientation and postnatal caregiving practices. Regression analyses were tailored to each dependent variable and all maternal orientation subscales were considered in separate equations. Infant feeding

type and room sharing were analysed using binary logistic regression, whereas co-sleeping (3-point response set) and leave to cry (4-point response set) were analysed by ordinal regression. Results are presented in terms of odds ratios (OR) with confidence intervals (CI). For the two related dimensional dependent variables (IFS, ISS), we used multivariate General Linear Modeling (GLM). Results are displayed in terms of unstandardised regression coefficients (B). The same format of regression analyses was applied to examine prospective associations between antenatal maternal orientation and postnatal caregiving practices. Each of the antenatal maternal orientation scales was considered separately in a first step. All analyses were then repeated, holding demographic variables constant including birth type and infant milk type (excluding analyses where infant milk type was the dependent variable) to test for robustness of findings. As we tested multiple hypotheses, a conservative alpha value was adopted ($p < .01$).

## Results

### Sample Attrition and Participant Characteristics

Of the 218 women who participated in pregnancy, 192 were retained at the 6-month postnatal follow up (88.1% retention). For the 26 women who did not continue reasons for attrition included: no explanation/unable to contact ($n$ = 13, 50.0%), relocation ($n$ = 4, 15.4%), other commitments ($n$ = 4, 15.4%), withdrawn consent ($n$ = 2, 7.7%), ill health ($n$ = 2, 7.7%), and stillbirth ($n$ = 1, 3.8%).

Those retained in the study were significantly older, $p$ = .02, but did not differ on any other demographic variables or measures of maternal orientation in pregnancy (all $ps > .05$). Data were analysed for the 192 women with complete data for T1 (pregnancy) and T2 (postpartum). As presented in Table 5.1, the majority of participants were partnered, spoke

only English, were tertiary educated and expecting their first child, and a relatively large number (*n* = 25, 13%) had conceived using ART, when compared to community rates of 4.1% in Australia (Li, Zeki, Hilder, & Sullivan, 2012).

Table 5.1

*Participant characteristics (N = 192)*

| | | |
|---|---|---|
| T1 (Pregnancy) | | |
| Maternal age | Mean (SD) | 32.5 (4.42) |
| Only English spoken at home | *n* (%) | 153 (79.7) |
| Married or de facto | *n* (%) | 187 (97.4) |
| Tertiary educated | *n* (%) | 143 (74.5) |
| No previous children | *n* (%) | 175 (91.1) |
| Assisted Reproductive Technology | *n* (%) | 25 (13.0) |
| T2 (Postpartum) | | |
| Gestational age at birth | Mean (SD) | 39.47 (1.58) |
| Premature birth (< 37 wks gestation) | *n* (%) | 7 (3.7) |
| Unassisted vaginal birth | *n* (%) | 90 (46.9) |
| Boy infant | *n* (%) | 98 (51.0) |
| In paid work | *n* (%) | 45 (23.5) |
| Infant feeding type | | |
| Breastmilk exclusively | *n* (%) | 82 (42.7) |
| Formula milk (with or without breastmilk) | *n* (%) | 110 (57.2) |
| Solid foods offered | *n* (%) | 192 (100.0) |

*Note:* As all mothers in our sample had introduced solid foods to their infants by 6-months of age, and 97% were partnered, neither of these variables was included as a confounding influence in the main analyses.

**Preliminary Analyses**

Descriptive statistics for the maternal orientation measures are presented in Table 5.2. For both antenatal measures at T1 (pregnancy), mean scores were relatively high on Facilitator subscales and low on Regulator subscales, indicating that participants endorsed more Facilitator than Regulator tendencies in pregnancy. Similarly, Facilitator tendencies were more common postpartum as indexed by the low mean score on the FRQ (postnatal form).

Table 5.2
*Psychometric Properties of the Antenatal Maternal Orientation Scales (AMOM-R, PPQ subscales), Postnatal Maternal Orientation (FRQ), and Postpartum Scheduling of Infant Feeds and Sleeps (IFS, ISS), N = 192*

| | | | | | | Range | | |
|---|---|---|---|---|---|---|---|---|
| | Items | $\alpha$[a] | *M* | *SD* | *Mdn* | Potential | Actual | Skew |
| T1 (Pregnancy) | | | | | | | | |
| AMOM-R Regulator | 8 | .57 | 18.48 | 5.99 | 19.0 | 0–48[b] | 3–34[b] | –.04 |
| AMOM-R Facilitator | 10 | .63 | 40.23 | 6.42 | 40.0 | 0–60[b] | 25–56[b] | –.14 |
| PPQ Regulator[c] | 5 | .69 | 1.17 | 1.61 | .5 | 0–15 | 0–6.5 | 1.50 |
| PPQ Facilitator | 5 | .74 | 10.00 | 2.86 | 10.3 | 0–15 | 2.5–15 | –.43 |
| T2 (Postpartum) | | | | | | | | |
| FRQ[d] | 5+1 | .38 | 6.41 | 2.81 | 6.50 | –1–16 | –1–13 | –.20 |
| IFS | 5 | .78 | 9.87 | 4.68 | 10.0 | 0–20 | 0–20 | –.26 |
| ISS | 5 | .81 | 6.90 | 4.40 | 7.0 | 0–20 | 0–20 | .38 |

*Note:* [a]Cronbach's alpha. [b]The range of possible scores on the AMOM-R is greater than that published in Roncolato and McMahon (2011) due to the addition of a neutral response option. [c]PPQ Regulator scale showing values prior to square root transformation. [d]FRQ shows all values for the FRQ (postnatal form) prior to the omission of Conflicted individuals. When omitted, *N* = 164, Cronbach's alpha increased from .38 to .51, however the range of scores, mean total score were near identical.

Examination of the data revealed a large positive skew for the PPQ Regulator subscale due to limited reports of persistent persecutory thought, comparable with that found in Chapter 3. A square root transformation reduced the skew from 1.50 to .57. This transformed variable was used for all PPQ Regulator subscale analyses and produced more uniform residuals than the untransformed data.

In keeping with recent research (van Bussel, Spitz, & Demyttenaere, 2009a, 2009b, 2010a), we classified maternal orientation as a dimensional construct across all maternal orientation measures. This raised a specific issue for the FRQ (postnatal form). Whereas the PPQ subscales and the AMOM-R, comprising two scales each, can measure the Facilitator and Regulator orientations independently, the FRQ (postnatal form) comprises only one scale and cannot do so. Consequently, low scores on the FRQ (postnatal form) represent a Facilitator approach and high scores reflect a Regulator approach, but middle scores can represent either moderate views relative to both the Facilitator and Regulator orientation (Reciprocators), or extreme views endorsing both the Facilitator and Regulator orientations simultaneously (Conflicted individuals). Unlike the Reciprocators, Conflicted individuals do not fit within a graduated spectrum of maternal orientation from Facilitator to Regulator positions, which is assumed with a dimensional format. Hence their inclusion could potentially confound the interpretation of results. Following the scoring rubric recommended by Raphael-Leff (2009), we explored individual responses to the first four items on the FRQ and identified 28 women (14.6%) who indicated both extreme Facilitator and extreme Regulator stances (identified as Conflicted individuals). Consistent with previous research (Roncolato & McMahon, 2013), we removed these participants from all

analyses involving the FRQ postnatal form (*N* = 164). The complete sample is retained for all other analyses (*N* = 192).

With regard to caregiving practices, total scores on the IFS and ISS comprised the full spectrum of possible scores (see Table 5.2), indicating both flexible and scheduled approaches to infant feeding and sleep. Furthermore, most mothers slept in a separate room from their infants, *n* = 130, 67.7%, and the majority reported that they never co-slept with their infants, *n* = 146, 76.0%, when compared with those who occasionally shared a bed, *n* = 31, 16.1%, and those who shared a bed more often than not, *n* = 15, 7.8%. In relation to settling their babies to sleep, more than a third of the women, *n* = 70, 36.5%, said they had never left their baby to cry it out, 25 women (13.0%) said they had done so only once, 65 (33.9%) had left their baby to cry a few times, and 31 (16.1%) said they did so often.

**Hypotheses Testing**

***Antenatal and postnatal maternal orientation.*** All antenatal maternal orientation scales (AMOM-R, PPQ subscales) had small but significant associations with postnatal maternal orientation (FRQ postnatal form), and in the direction expected according to theory. Those with Facilitator tendencies in pregnancy as measured by higher scores on both Facilitator scales (AMOM-R, PPQ) or lower scores on both Regulator subscales (AMOM-R, PPQ), tended to have lower scores (Facilitator tendencies) on the FRQ at the postnatal follow-up (see Table 5.3).

***Postnatal maternal orientation and caregiving practices.*** When concurrent associations were examined between postnatal maternal orientation (FRQ postnatal form) and caregiving practices (*N* = 164), all relationships were in the direction expected, although feeding type was only marginally significant. Women scoring lower on the FRQ (indicating

Facilitator tendencies) had lower scores on the IFS and ISS, Wilks' lambda = .65, $F(2,161)$ = 43.78, $p$ = .00, indicating less scheduling of infant feeds, $\beta$ = .59, SE = .10, $t$ = 9.27, $p$ = .00, and infant sleeps, $\beta$ = .42, SE = .10, $t$ = 5.89, $p$ = .00. The FRQ accounted for 34.7% and 17.6% of the variance in infant feeds and sleeps, respectively. Furthermore, low FRQ scores (Facilitator tendencies) were related to a higher rate of mother-infant room sharing overnight, OR = 1.22 [CI 1.04–1.44], $p$ = .00, co-sleeping more frequently, OR = 1.18 [CI 1.00–1.39], $p$ = .01, and leaving their baby to cry to sleep less often, OR = 1.14 [CI 1.00–1.29], $p$ = .01. Women with lower scores on the FRQ (Facilitator tendencies) showed a trend towards breastfeeding exclusively, OR = 1.11, [CI .97–1.29], $p$ = .05.

Table 5.3

*Correlations among Antenatal and Postnatal Maternal Orientation measures (N = 164; Conflicted Individuals on the FRQ omitted)*

| Measures | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| T1 (Pregnancy) | | | | | |
| AMOM-R Regulator | - | –.42 ** | .45 ** | –.22 * | .29 ** |
| AMOM-R Facilitator | | - | –.20 | .44 ** | –.24 * |
| PPQ Regulator[a] | | | - | –.14 | .25 * |
| PPQ Facilitator | | | | - | –.20 * |
| T2 (Postpartum) | | | | | |
| FRQ | | | | | - |

*Note:* Pearson correlation coefficients are presented above to indicate degree of correlation. [a]PPQ Regulator represents square root transformation of the PPQ Regulator subscale. FRQ represents the FRQ (postnatal form). *$p$ < .01; **$p$ < .001.

Table 5.4

*Odds Ratios (99% confidence interval) for Logistic and Ordinal Regression, and Unstandardised Coefficients for General Linear Multivariate Model Related to Infant Feeding and Sleep Practices (N = 192)*

| | Milk feeding type[a] | Scheduling of infant feeds and sleeps | | | | Mother-infant proximity | | Leave to cry[b] |
|---|---|---|---|---|---|---|---|---|
| | | IFS[c] | | ISS[c] | | Shared room[a] | Co-sleep[b] | |
| | OR [ 99% CI ] | B | SE | B | SE | OR [ 99% CI ] | OR [ 99% CI ] | OR [ 99% CI ] |
| Model 1: | | | | | | | | |
| AMOM-R Regulator | 1.08 [1.01, 1.16] * | .22 ** | .05 | .14 * | .05 | 1.01 [ .94, 1.07] | 1.02 [ .95, 1.10] | 1.06 [1.00, 1.13] * |
| Model 2: | | | | | | | | |
| AMOM-R Regulator | 1.06 [ .98, 1.14] | .17 * | .06 | .16 * | .06 | 1.00 [ .93, 1.09] | 1.02 [ .94, 1.11] | 1.07 [1.01, 1.14] * |
| Confounding variables | | | | | | | | |
| Maternal age | 1.02 [ .92. 1.13] | –.10 | .08 | –.00 | .08 | 1.01 [ .91, 1.14] | 1.04 [ .93, 1.17] | 1.00 [ .91, 1.09] |
| Cultural background | | | | | | | | |
| English spoken vs. other | .49 [ .16, 1.51] | .61 | .85 | 1.21 | .84 | 5.23 [1.61,17.00]** | 2.98 [ .92, 9.73] | 1.49 [ .58, 3.84] |
| Education | | | | | | | | |
| Secondary vs. tertiary | 4.17 [1.41,12.30]** | –1.05 | .77 | –1.00 | .77 | .29 [ .09, .90] * | .43 [ .14, 1.34] | .76 [ .32, 1.80] |
| Parity | | | | | | | | |
| Nullip vs. primip/multip | 2.51 [ .52,12.10] | 1.79 | 1.16 | 2.03 | 1.16 | 3.62 [ .64, 20.47] | 2.68 [ .61, 11.72] | 2.69 [ .66, 10.87] |
| Assisted reproductive tech | | | | | | | | |
| Assisted vs. unassisted | .74 [ .21, 2.66] | –.60 | .96 | .56 | .97 | 2.15 [ .55, 8.42] | 1.09 [ .24, 5.00] | 1.64 [ .56, 4.84] |
| Gestational age at birth | 1.04 [ .79, 1.36] | –.35 | .20 | –.20 | .20 | .87 [ .64, 1.17] | .98 [ .72, 1.33] | .94 [ .75, 1.18] |
| Birth type | | | | | | | | |
| Vaginal unassisted vs. other | .69 [ .29, 1.62] | –.83 | .66 | .17 | .66 | .60 [ .23, 1.53] | .48 [ .17, 1.33] | 1.06 [ .51, 2.22] |
| Infant gender | | | | | | | | |
| Boy vs. girl | .99 [ .42, 2.34] | –.32 | .65 | .10 | .65 | .99 [ .38, 2.58] | 1.28 [ .47, 3.47] | 1.21 [ .58, 2.50] |
| Work postpartum | | | | | | | | |
| No paid work vs. paid work | .70 [ .26, 1.89] | 1.15 | .76 | 1.09 | .76 | 1.34 [ .45, 4.02] | 3.75 [1.33, 10.60] * | 1.64 [ .69, 3.87] |
| Infant milk feed type | | | | | | | | |
| Breastmilk only vs. formula | N/A | –2.31 * | .68 | –.84 | .68 | .33 [ .12 , .91] * | .48 [ .17, 1.40] | .88 [ .41, 1.87] |

*Note:* Only the AMOM-R Regulator scale is represented in this table. [a]Binary logistic regression, [b]ordinal logistic regression, [c]multivariate general linear model. IFS = Infant Feeding Schedules, ISS = Infant Sleeping Schedules. nullip = nulliparous, primip = primiparous, multip = multiparous. All reference categories are the latter mentioned category. *$p < .01$, **$p < .001$.

***Antenatal maternal orientation and postnatal caregiving practices.*** When examining prospective associations with caregiving, significant associations were found only in regard to the AMOM-R Regulator subscale (see Table 5.4). Antenatal maternal orientation was associated with infant milk type (breastmilk only vs. formula milk) at T2. Women with a more Regulator orientation were more likely to feed their infant formula milk. Once demographic variables were included, maternal education also emerged as a strong predictor of feeding type (see Table 5.4) and the effect of antenatal orientation became marginal. Those with tertiary education were more likely to offer breastmilk exclusively to their infants than those with a lower level of education. The AMOM-R Facilitator scale and PPQ subscale scores were not related to feeding postnatally.

As with milk feeding type, maternal orientation in pregnancy (measured by the AMOM-R Regulator scale) was associated with scheduling of both infant feeds and sleeps, Wilks' lambda = .92, $F(2,189) = 7.92$, $p < .00$. Higher scores on the AMOM-R Regulator scale (a more Regulator orientation) predicted significantly higher scores on the IFS (more scheduling of infant feeds), $\beta = .28$, SE = .05, $t = 3.96$, $p < .00$; and the ISS (more scheduling of infant sleeps), $\beta = .19$, SE = .05, $t = 2.73$, $p = .01$ (see Table 5.4). However, effect sizes were small, with the AMOM-R Regulator scale accounting for 7.6% and 3.8% of the variance in scheduling of feeds and sleeps, respectively. When demographic variables were added, antenatal maternal orientation remained a significant predictor of scheduling both infant feeds and sleeps, and infant milk feed type predicted scheduling of infant feeds, but not infant sleeps (Table 5.4). Those breastfeeding exclusively were less likely to schedule infant feeds than those formula feeding their infants.

Antenatal maternal orientation did not predict mother-infant room sharing postpartum (Table 5.4), however, language spoken in the home, maternal education and infant milk feeding type were all significant predictors. Those who spoke only English, were tertiary educated, and/or feeding formula to their infants were more likely to have their infants sleep in a separate room overnight. Similarly, antenatal maternal orientation did not predict mother-infant co-sleeping. However, those who were in part-time or full-time work co-slept more frequently with their babies than those who were not currently employed.

Antenatal maternal orientation (scores on the AMOM-R Regulator scale) predicted a mother's willingness to leave her baby to cry to sleep even after possible confounding variables were entered into the equation. Mothers with a higher score (a more Regulator orientation in pregnancy) were more likely to leave their baby to cry. No other independent variable explained any additional variance. Birth type was not associated with any parenting method.

## Discussion

This study aimed to examine the stability of maternal orientation across the transition to parenthood, and to assess relationships with parenting styles postpartum. Antenatal maternal orientation (irrespective of the measure used) was associated with postnatal maternal orientation, and in the direction predicted by theory, although associations were small. Second, also in accordance with theory, antenatal maternal orientation as defined by the Regulator scale of the AMOM-R predicted likelihood of breastfeeding, whether the infant was fed on demand or by schedule, and the propensity to leave baby to cry to sleep, but not mother-infant proximity overnight. Concurrent reports of postnatal orientation (FRQ Facilitator scores), however, were associated with both room-sharing and co-sleeping.

Pregnancy Facilitator (AMOM-R) scores did not predict maternal caretaking behaviours, nor did either the Facilitator or Regulator scores from the Placental Paradigm Questionnaire (PPQ) subscales.

The association between antenatal and postnatal maternal orientation adds to a limited empirical evidence base for stability and construct validity. Significant results were found among the three different maternal orientation measures, despite the item content reflecting different aspects of the theory, i.e., maternal expectations and caregiving plans for the AMOM-R, use of daily routines, feeding schedules and beliefs regarding the infant for the FRQ (postnatal form), and underlying intrapsychic defenses for the PPQ subscales. The small associations may indicate the tendency to oscillate around a Facilitator or Regulator orientation over time rather than hold steadfast to a point of view. Certainly, we believe this was the interpretation Raphael-Leff intended when she explained that women may struggle "to maintain the orientation of their choice … confronted by a reality that engenders compromise" (Raphael-Leff, 2009, p.356). Measurement error could also be responsible to some degree. It should be noted that further work to improve psychometric properties of all measures is warranted, in particular for the postnatal measure. The FRQ (postnatal form) could benefit from items to address maternal cognitions and assess parenting strategies around infant sleep (Roncolato & McMahon, 2013). Moreover, two separate Facilitator and Regulator scales would allow for a simpler scoring procedure and the inclusion of the Conflicted group without compromising the integrity of the data. Notwithstanding these limitations, the results offer some support for Raphael-Leff's (1986, 2009) proposition that maternal orientation is enduring across the transition to motherhood, but further research is needed before definitive conclusions can be formulated.

The second hypothesis regarding relations between maternal orientation and postnatal caregiving was partially supported. Higher likelihood of exclusive breastfeeding, less scheduling of infant feeds and sleeps, and a lower tolerance for leaving the baby to cry to sleep were all characteristic of those who reported lower scores on the AMOM-R Regulator scale during pregnancy. Breastfeeding findings are consistent with prior research (Raphael-Leff, 1983; Sharp & Bramwell, 2004). Also consistent with extensive research evidence (e.g., Dozier et al., 2013; Sutherland, Pierce, Blomquist, & Handa, 2012), higher education was associated with greater likelihood of breastfeeding. Women with more education may be more aware of the health benefits of exclusive breastfeeding in the first six months of life (Brown, Raynor, & Lee, 2011; McNeil, Labbok, & Abrahams, 2010).

Results of the current study indicate that a mother's attitude in pregnancy toward the timing of infant feeds follows through to her caregiving practices postpartum. Further, and not surprisingly, we found that the tendency to schedule feeds also extended to the management of infant sleeps. Mothers with a more Regulator orientation in the antenatal period tended to schedule infant sleeps, as well as infant feeds, extending previous findings of concurrent associations (Roncolato & McMahon, 2013). However, the variance accounted for was small, and much less than that accounted for by postnatal maternal orientation, indicating that mothering style is multiply determined. Further, shared method variance between the FRQ (postnatal form) and the IFS needs to be acknowledged. As anticipated, scheduling was in part dictated by milk feeding type. Women breastfeeding exclusively tended to feed "on demand" (at unrestricted times), confirming the importance of controlling for this variable.

Contrary to expectation, no antenatal maternal orientation measure predicted mother-infant room sharing or co-sleeping overnight, although concurrent associations were found, consistent with previous findings (Roncolato & McMahon, 2013). Other demographic variables explained some variance in mother-infant proximity. In regard to room sharing, mothers who breastfed exclusively were more likely to room share with their infants. In addition, a non-English speaking background (likely to indicate recent migrant status in an Australian sample) as well as lower educational attainment were associated with mother-infant room sharing perhaps due to cultural influences and/or the necessity to room share based on limited space and the lack of available alternatives. With regard to co-sleeping, those who were in paid work were significantly more likely to co-sleep with their infants, also replicating a previous findings from Chapter 4. It may be that co-sleeping is a pragmatic strategy to maximise sleep for mothers who need to get up early to work or possibly an opportunity for the mother to be close to the baby after separations during the day.

For sleep settling, as expected, those who had less Regulator tendencies in pregnancy were less likely to leave their baby to cry to sleep, extending previous findings of concurrent associations (Roncolato & McMahon, 2013). According to the theory, the Facilitator orientation is associated with the encouragement of dependency and efforts to preserve harmony between mother and infant compared with the Regulator orientation characterised by strategies to promote independence and infant self-soothing (Raphael-Leff, 2009).

**Strengths and Limitations**

The main strengths of the study were the longitudinal design and the large sample size enabling comparison of maternal orientation in pregnancy with both maternal orientation and maternal caregiving practices postpartum, whilst taking account of a large

number of demographic and other potentially confounding variables that may shape caregiving practices in the postnatal period.

Several limitations need to be acknowledged. The maternal orientation measures require further empirical validation. The AMOM-R Regulator scale appeared to have the best construct validity, confirming previous findings (Roncolato & McMahon, 2011). However, the reliability of the AMOM-R was lower for the current sample than for the sample from which it was developed. A return to a 6-point response set might lead to a greater internal consistency as it forces the respondent to choose either a Facilitator or Regulator approach rather than taking a middle position.

The majority of women in the current study were primiparous. This may in part account for the lack of findings in relation to parity. In previous research, a more Regulator orientation was associated with first-time parenting both prenatally (Roncolato & McMahon, 2011) and postnatally (Raphael-Leff, 1985b, Scher & Blumberg, 1992), perhaps due in part to previous maternal experiences and the necessity to attend to more than one child's needs for those with other children. Exploration of the influence of parity with a sample containing comparable numbers of multiparous and primiparous women would further clarify this.

As mothers were predominantly of a Facilitator orientation, this may reflect the prevailing views of Australian child and family health practitioners on the management of young infants, that tend to encourage responsiveness to infant crying (Australian Association for Infant Mental Health, 2004, 2006) and breastfeeding on demand (e.g., Walker, 2011). The study did not assess the antenatal education or health professional contact the mothers had received.

A further limitation was reliance on maternal self-report for caregiving practices which may have biased responses. Observation or more objective measures could allow for confirmation of parenting style and reduce any possibility of social desirability. Further, we did not distinguish among different non-English speaking backgrounds in the current study, and a large proportion of the participants were from relatively high-socio-economic groups. Although maternal orientation theory emerged from investigations with a similarly homogeneous demographic of women in England (Raphael-Leff, 1983, 1985a, 1985b), examining childrearing methods in more diverse cultural and socio-economic settings would help to uncover practices specific to different cultures and determine the cross-cultural validity of the maternal orientation construct.

**Future Research**

Despite small to moderate correlations with the other maternal orientation measures, neither the PPQ subscales nor the AMOM-R Facilitator subscale predicted caregiving practices. These subscales may be measuring a related but distinct aspect of maternal orientation to that accessed by the AMOM-R Regulator subscale and the FRQ (postnatal form). Considering item content and based on previous findings, the PPQ subscales might relate more strongly to maternal adjustment across the transition to mothering. The PPQ subscales have been associated with maternal reports of physical health in pregnancy (Chapter 3), and mental health prenatally and postnatally (van Bussel et al., 2009a, 2009b). Similarly, the AMOM-R Facilitator subscale items focus largely on the perceived maternal bond with the foetus and may discriminate aspects of a mother's emotional experience not analogous to her infant caretaking methods.

Whether or not a woman experienced medical intervention during childbirth was not found to influence postpartum caregiving practices. Whether or not her expectations were met in regard to her infant's birth might be more relevant. Raphael-Leff (1995, 2009) proposed that a birth not going to plan could cause distress for both Facilitator and Regulator mothers; Facilitator mothers desiring natural and unassisted childbirth, and Regulators preferring medical assistance and analgesia. Van Bussel et al. (2010a) found that primiparous Facilitators reported feeling less fulfilled when they had experienced an assisted delivery. Unmet expectations of labour and childbirth might lead to disillusionment and changes in orientation in the postpartum period. Future research could also include a measure of satisfaction with childbirth.

The fact that feeding practices are predicted from pregnancy confirms the importance of antenatal education including information on the health advantages of breastfeeding. In some instances, however, circumstances could prevent women from breastfeeding their infant exclusively even if they have expressed a desire to do so during pregnancy. For those who discontinue breastfeeding, the reasons for introducing formula milk in the early weeks or months may well be different for those with a more Facilitator or Regulator approach, and like unmet expectations regarding the birth experience, the ease of transition from one feeding method to the other could further differentiate those with these distinct orientations.

Other factors not measured in this study are likely to affect postnatal caregiving practices. A woman's support system, her partner, her cultural background, her own mother or those around her, reading material and classes on specific mothering philosophies could influence her parenting decisions.

Owing to mixed findings, further research is needed to clarify whether a fundamental difference exists in maternal outcomes for the Facilitator and Regulator orientations. In the current study, we did not investigate maternal mood. Researchers examining whether antenatal maternal orientation predicts depressive symptoms have found that a Regulator orientation (classified in pregnancy) is associated with more depressive symptoms in the postpartum period (Sharp & Bramwell, 2004; van Bussel et al., 2009a). In contrast, one recent study reports no relationship between postnatal maternal orientation and maternal subjective well-being (Roncolato & McMahon, 2013). The lack of differentiation when maternal orientation is classified postnatally might reflect a change of values or orientation postpartum in keeping with current methods of infant care, and the relatively positive well-being that resulted may be the product of this adaptive response.

Finally, studies aimed at exploring relations with mother-infant attachment are recommended. Associations have been found between Regulator tendencies assessed in pregnancy and more insecure (avoidant and anxious attachment styles) (see Chapter 3). In addition, the more baby-led, responsive approach of the Facilitator measured at 6-months postpartum has been associated with more securely attached infants at one year using the Strange Situation paradigm in a small scale study (Scher, 2001). Antenatal maternal orientation might predict the bond a woman feels toward her infant postpartum, the infant's subsequent attachment security, and his or her ability to regulate emotion.

## Conclusions

The results of this study offer modest support for Raphael-Leff's proposition that individual differences in maternal orientation remain relatively stable across the transition to motherhood and influence mothering practices postpartum. The small effect sizes, however,

confirm that many other factors are likely to play a part in determining a mother's commitment to her approach and the specific caregiving methods that result. The fact that concurrent maternal orientation is more associated with certain parenting practices than antenatal maternal orientation suggests that mothers may vary their orientation in order to adapt to their infant's idiosyncrasies and current circumstances.

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# CHAPTER 6

## Facilitators and Regulators:

## Predicting Maternal Depression Symptoms and Mothers' Subjective Attachment to Their Infants

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**Author Contributions.** As a member of the Perinatal Regulation and Mood Study (PRAMS) research team, I (Wendy Roncolato) was partly responsible for recruitment of women and the design of questionnaires (all original authors acknowledged), and assisted with data collection. I completed all statistical analyses with the assistance of Dr Alan Taylor and wrote this following paper under the supervision of Associate Professor Catherine McMahon.

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## Abstract

***Background.*** Two different orientations to early motherhood have been described: Facilitators who prefer a flexible baby-led approach and Regulators who plan a mother-led structured routine for infant care (Raphael-Leff, 1983).

***Objective.*** This study investigated whether these individual differences in maternal orientation (Facilitator/Regulator) were associated with postnatal adjustment, (depression symptoms, reported attachment toward the infant), whilst taking account of a range of potential confounds.

***Method.*** Participants were 196 women who completed questionnaires about maternal orientation (AMOM-R, PPQ subscales) and depressive symptoms, at 32-weeks gestation, and depressive symptoms and subjective feelings of attachment toward their infants at three months postpartum.

***Results.*** Path analysis indicated that more Regulator and less Facilitator tendencies in pregnancy were associated with less optimal maternal adjustment postpartum (higher depression symptoms, less positive maternal evaluations of attachment toward the infant). Regulator scores made a unique contribution to predicting reported attachment, however the strongest predictor was antenatal depressive symptoms via postnatal depressive symptoms.

***Conclusions.*** Taken together, these findings suggest that the maternal orientation construct may be a valuable tool in predicting a woman's adjustment to motherhood and understanding individual differences in coping.

## Introduction

Women enter into motherhood with specific ideas about the mothering role, preconceptions about their child, and plans regarding their future caregiving style. These approaches to motherhood can vary considerably across individuals and may predict future functioning postpartum. Working from a psychoanalytic perspective, Raphael-Leff (1983, 2009) proposed a model of "maternal orientation" to classify these individual differences into meaningful groups.

A spectrum of mothering approaches was proposed within two distinct standpoints: a "Facilitator" who expects to adapt to her baby and a "Regulator" who expects the baby to adapt to her. The Facilitator follows her baby's lead, with caregiving methods characterised by frequent and immediate responsiveness. In comparison, the Regulator encourages her infant to fit a predictable routine, guarding against loss of her own independence. The defense style characterising the Facilitator position is idealisation with low tolerance for negative or ambivalent feelings toward the baby, while the Regulator is motivated by a fear of loving and at worst persecutory feelings regarding the infant (Raphael-Leff, 1995). Although a woman may alter her orientation with subsequent childrearing experiences, her standpoint in pregnancy is believed to persist to the postnatal period for each infant, shaping her experience across the transition to motherhood (Raphael-Leff, 2009).

Recent studies have confirmed that maternal orientation is associated with differences in infant care methods and attitudes, as first theorised in Raphael-Leff's earlier work (1983, 1985a, 1985b). Endorsement of the Regulator standpoint has been associated concurrently in pregnancy with inflexible childrearing beliefs (Roncolato & McMahon, 2011), and postnatally with separate mother-infant sleeping arrangements, set times for infant

feeds and sleeps, and less hands-on infant settling (Roncolato & McMahon, 2013). These findings offer some support for Raphael-Leff's concept of maternal orientation. However, the theory aims to make deeper psychological inferences based on these caretaking differences. Infant care methods are considered only superficial indicators of underlying intrapsychic processes. How a mother feels about her infant and the mothering role are considered primary driving forces directing infant care. In the current study, we aim to investigate whether a woman's maternal orientation during pregnancy influences her psychological adjustment to mothering in the early months, indexed by postnatal symptoms of depression and her subjective feelings of attachment toward her infant.

**Maternal Orientation and Symptoms of Depression**

Whilst acknowledging vulnerabilities associated with the Facilitator orientation, maternal orientation theory predicts that the Regulator position has more negative implications for a woman's adjustment to motherhood. A woman holding a more Regulator view is, by definition, less enamoured with the idea of becoming a mother and more likely than the Facilitator to find the role an encroachment or a threat to her hard-earned adult identity (Raphael-Leff, 2009). To date, however, research investigating the link between maternal orientation and maternal depression is limited and provides only modest support for this proposition.

In two prospective studies, using different methods of assessing maternal orientation, a Regulator orientation in pregnancy has been associated with the self-report of more depressive symptoms postpartum, even when controlling for antenatal depressive symptoms (Sharp & Bramwell, 2004; van Bussel, Spitz, & Demyttenaere, 2009a). In contrast, in Chapter 4 it was found that maternal orientation was not associated with postpartum maternal

reports of subjective well-being with mothers of infants between 4 and 7 months of age when assessed concurrently (Roncolato & McMahon, 2013). However, well-being is an indication of overall functioning and does not examine negative affect separately from positive affect. The first aim of the current study is to prospectively examine the relationship between antenatal maternal orientation and postnatal symptoms of depression.

It is important, however, to acknowledge that a woman's reported maternal orientation in pregnancy could be influenced by her mood at the time. Given that the Facilitator position is one of idealisation of pregnancy and positive imagined future mother-infant interactions, and the Regulator orientation carries the potential of persecutory thought and expectations of mother-infant discord (Raphael-Leff, 1983, 2009), a woman's antenatal maternal orientation is likely to correspond with her self-reported feelings of depression in pregnancy. For this reason we also consider antenatal symptoms of depression when examining the relationship between antenatal maternal orientation and postnatal depressive symptoms.

**Maternal Orientation and Subjective Attachment to the Infant**

The identification of factors that predict a woman's cognitive and affective adjustment in the early postnatal period, at a time of intense infant dependency, is imperative for the promotion of both maternal and infant well-being. The quality of the early mother-infant relationship has been identified as a determinant of the infant's social, cognitive and emotional development (Ainsworth, 1979; Ranson & Urichuk, 2008). A woman's maternal orientation in pregnancy might be one factor providing insight into her feelings toward her baby soon after birth. Implicit in maternal orientation theory is the notion of differences in how unborn babies and young infants are viewed, in particular, the

extent to which they are viewed as social beings. The Facilitator mother expects her infant will be able to communicate meaningfully with her right from the start, and may therefore seek opportunities to interact and become attuned with her infant from birth (Raphael-Leff, 1983). The Regulator mother, on the other hand, views young infants as asocial beings, described as a "bundle of needs" (Raphael-Leff, 1983, p. 380) requiring containment. With her desire for separateness, she strives to promote independence in her infant, leading potentially to less opportunity for the development of the mother-infant bond in the early months. While research has not yet examined mothers' feelings toward their infants in relation to maternal orientation, studies have examined maternal self-reports of attachment style in relation to early caretaking experiences, and one study has examined mother-infant attachment with infants aged 12 months.

Van Bussel (2009) reported that women classified as Regulators using the Placental Paradigm Questionnaire (PPQ) subscales (a measure focusing on persecutory defenses), frequently endorsed items associated with fearful and preoccupied attachment representations in the context of close adult relationships using the Dutch version of the Relationships Questionnaire (RQ; Bartholomew & Horowitz, 1991). More recently, self-reports of attachment style measured by the Attachment Style Questionnaire (ASQ; Feeney, Hohaus, Noller, & Alexander, 2001) were examined in relation to maternal orientation in pregnancy and endorsement of more Regulator tendencies was associated with insecure attachment styles, specifically higher anxiety about relationships and a discomfort with closeness (Roncolato & McMahon, 2011).

In the only study to date to link maternal orientation with observed mother-child attachment, Scher (2001) reported that in a sample of 79 mothers with infants, a Facilitator

orientation (assessed at 6-months postpartum) was related to a greater likelihood of infants being classified as securely attached at 12 months of age based on reactions to the Strange Situation procedure (i.e., Ainsworth, Blehar, Waters, & Wall, 1978) while mothers with a more Regulator orientation were more likely to have infants classified as insecure. The current study takes a somewhat different approach by assessing maternal orientation prior to birth and examining relations with the mother's subjective experience of attachment to her young infant. Given that previous research has linked a Regulator orientation with insecure attachment representations and a likelihood of insecure mother-infant attachment, we expect a more Regulator orientation in pregnancy to be associated with maternal reports of less optimal attachment to their infants.

**Maternal Orientation Measures**

One difficulty in drawing conclusions from empirical research on maternal orientation is that different measures have been used to operationalise the construct. The Facilitator Regulator Questionnaire 3-item scale (FRQ; Raphael-Leff, 1985b) has been used at times as a 2-item scale (e.g., Scher & Blumberg, 1992, 1999) and later revised to a 5-item scale (Raphael-Leff, 2009). Similarly, the Antenatal Maternal Orientation Measure (AMOM; Sharp & Bramwell, 2004) has been recently modified (AMOM-R; Roncolato & McMahon, 2011), as has the Placental Paradigm Questionnaire Facilitator and Regulator subscales (PPQ, Raphael-Leff, 2009; with subscales refined by van Bussel, 2009) to achieve greater reliability.

In the current study, we employ the two measures of antenatal maternal orientation that have generated the greatest reliability in previous studies, the PPQ Facilitator and Regulator subscales (refined by van Bussel, 2009) and the AMOM-R (Roncolato & McMahon, 2011), allowing us to examine the predictive validity of both measures. We expect that the

Facilitator and Regulator scales will be associated with maternal symptoms of depression and maternal postnatal attachment in opposing ways. Since research related to maternal mood has generally implicated the Regulator orientation, we expect that a more Regulator orientation in pregnancy will predict more depressive symptoms and less optimal attachment to the baby.

We test our hypotheses taking account of well-documented confounding variables relating to our dependent variables (depressive symptoms and self-reported attachment). As symptoms of depression in pregnancy have been consistently shown to be among the strongest predictors of postnatal symptoms (Buist et al., 2006; Milgrom et al., 2008), we control for antenatal depressive symptoms. Secondly, given evidence that postnatal symptoms of depression may influence the quality of mother-infant interaction (Murray, Cooper, & Hipwell, 2003; Poobalan et al., 2007) as well as the subjective pleasure the mother derives from being with her baby (Cornish et al., 2006) in analyses examining the mother's reported attachment to the infant, we also control for postnatal depressive symptoms.

We propose a theoretically driven model to incorporate these well-established relationships, and seek to determine the unique contribution of maternal orientation to maternal adjustment. Further, as context can contribute to a mother's postnatal experience with her infant, we also consider a range of demographic variables that could influence maternal mood and feelings of attachment toward their infant; namely maternal age, language spoken at home, level of education, parity, planned pregnancy, conception using Assisted Reproductive Technology (ART), birth type, gestational age at birth, infant gender, engagement in paid work and infant feeding type.

## Method

### Participants

Participants were recruited from antenatal clinics, birth education classes and a perinatal psychiatry clinic within three Sydney metropolitan hospitals between July 2010 and January 2012. Initially, 361 women expressed interest and agreed to be contacted by phone to discuss study requirements in more detail. Inclusion criteria were gestation < 32 weeks, singleton pregnancies and sufficient English to answer questionnaires. In total, 218 pregnant women (60.4%) agreed to participate and written consent was obtained.

### Procedure

Ethics approval was received from all relevant institutional ethics committees. Participants completed two online questionnaires created using Qualtrics Research Suite software (Qualtrics Labs Inc., 2009). At Time 1 (T1, 32-weeks gestation), demographic information was collected, antenatal maternal orientation classified and depressive symptoms assessed. At Time 2 (T2, 3-months postpartum), depressive symptoms were reassessed and each mother's subjective feelings of attachment to her infant evaluated.

### Measures

***Maternal orientation (T1 pregnancy).*** We used two maternal orientation measures in pregnancy. The Antenatal Maternal Orientation Measure-Revised (AMOM-R) assessed conscious mothering expectations and caregiving plans, whereas the PPQ Facilitator and Regulator subscales aimed to access deeper intrapsychic responses, with Facilitator and Regulator orientation indexed primarily by idealisation and persecutory ideation, respectively.

All *Antenatal Maternal Orientation Measure-Revised* (AMOM-R) items were taken from the original measure (AMOM; Sharp & Bramwell, 2004), however the format was modified. In the AMOM, each item presents a Facilitator and a Regulator statement as extreme scale options, separated by a 7-point response scale. Participants were required to choose a position along the scale to indicate their preference toward one approach and away from the other. With this format, there was no possibility of endorsing both a Facilitator and a Regulator viewpoint for the same item, even though it was conceivable that a woman may relate to both statements. In contrast, the AMOM-R allows independent measurement of Facilitator and Regulator tendencies. Each paired statement from the AMOM was separated into two items: a Facilitator item and a Regulator item. All Facilitator items and all Regulator items were then combined to produce two distinct subscales. All items that contributed to improved internal consistency were retained. Detailed explanation of scale modification and item selection is provided in Chapter 2 Method. The 10-item Facilitator subscale assesses a pregnant woman's expectation of her infant (e.g., "My baby will be like someone I already know"), her anticipated experience of early mothering (e.g., "My baby will fit easily into my life") and infant feeding plans (e.g., "To begin with, I intend to feed my baby on demand"). Items on the 8-item Regulator scale are largely complementary to those on the Facilitator subscale, (e.g., "My baby will be like a stranger at first", "I will be mostly waiting for things to get back to normal", and "To begin with, I intend to feed my baby at set times"). For the current study, we extended the response set to include a neutral response option within a 7-point scale, ranging from *strongly disagree* to *strongly agree*. High scores on either subscale indicated a greater tendency toward that orientation.

The *Placental Paradigm Questionnaire (PPQ) Facilitator and Regulator subscales* (van

Bussel, 2009) are two 5-item subscales that can be used to determine maternal orientation in pregnancy. These subscales originated from those nested in the larger Placental Paradigm Questionnaire (Raphael-Leff, 2009), developed as a screening tool to detect specific antenatal emotional disturbance. The Facilitator orientation was measured by the tendency to idealise pregnancy (e.g., "Pregnancy is the peak of my female experience"), whereas the Regulator orientation was defined primarily by the presence of persecutory thought (e.g., "The baby seems like an intruder or parasite"). Based on the recommendations of van Bussel (2009), response options were extended from the original 4-point scale to a 7-point scale, with a response set ranging from *strongly disagree* to *strongly agree*. High scores on each subscale reflected a higher Facilitator or Regulator orientation, respectively, consistent with the AMOM-R above. Although the PPQ subscales were originally designed so that low scores on all subscales indicated a Facilitator tendency and high scores a Regulator tendency, we reverse-coded the Facilitator scale so that results could be directly compared with the work of van Bussel (2009) and the AMOM-R.

***Symptoms of depression (T1 pregnancy, T2 postpartum).*** The Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden, & Sagovsky, 1987) is a 10-item screening tool widely used to screen for depression in the perinatal period (Brouwers, van Baar, & Pop, 2001). Items ask women to estimate how often over the "past seven days" they have experienced specific symptoms such as low mood (e.g., "I have felt sad or miserable"), anxiety (e.g., "I have felt scared or panicky for no good reason"), and issues with sleep (e.g., "I have been so unhappy that I have had difficulty sleeping"). Responses are gauged along a 4-point scale with higher scores indicative of more intense or more frequent symptoms. We used the total score to provide an overall estimate of symptomatology. Following guidelines provided by

Buist et al. (2008), women with scores of 10 or more (a moderate likelihood of clinical diagnosis), those with scores of 13 or above (a high likelihood of clinical diagnosis), and those high on suicidal ideation (scores > 0 on item 10), were contacted by a clinician from the research team for further assessment and referral to medical providers for ongoing treatment where appropriate.

***Mothers' subjective attachment to their infants (T2 postpartum).*** The Maternal Postnatal Attachment Scale (MPAS; Condon & Corkindale, 1998) assesses how attached a mother feels toward her infant. Nineteen items are presented in the form of incomplete sentences. Respondents are required to complete each sentence stem by selecting the most suitable answer from two, four or five unique response options. Items were recoded to ensure equal weighting with a score of 1 representing low feelings of attachment and a score of 5 reflecting a strong attachment (J. Condon, personal communication, September 7, 2012). The measure yields three subscales: Quality of Attachment (9 items, 3 reverse-coded; e.g., "When I am with the baby and other people are present, I feel proud of the baby"), Absence of Hostility (5 items; e.g., "Over the past three months, I have felt that I do not have enough time for myself or to pursue my own interests"), and Pleasure in Interaction (5 reverse-coded items; e.g., "I try to involve myself as much as I possibly can playing with the baby"). For the current study, we used the total score (the sum of the three subscale scores) as an index of subjective feelings of attachment toward the infant. Higher scores indicated a stronger mother-infant bond.

**Confounding Variables**

Demographic information included maternal age (years), language spoken at home (English only vs. English plus other), education (secondary vs. tertiary), parity (no previous

children vs. one or more children), planned pregnancy (planned vs. unplanned), use of Assisted Reproductive Technology (medically assisted conception vs. unassisted conception), birth type (vaginal unassisted vs. vaginal assisted/caesarean section), gestational age at birth (weeks), infant gender (female vs. male), paid work (no paid work vs. paid work), and milk feeding type (breastmilk exclusively vs. formula milk with or without breastmilk). Neither marital status nor the introduction of infant solids were included in analysis due to limited variability.

**Data Analysis**

Data from the Qualtrics Research Suite (Qualtrics, 2009) were imported into IBM SPSS format (IBM, 2012) for analysis. We used ANOVA to compare characteristics in pregnancy for those who did and did not complete both antenatal and postnatal research requirements. All variables were examined for normality. As positively skewed distributions were found for the PPQ Regulator scale and for the EPDS at both T1 (pregnancy) and T2 (postpartum), due to a low endorsement of persecutory thought and a low rate of reported depressive symptomatology, respectively, square root transformations were applied to all three variables. Cronbach's alpha was calculated to gauge reliability for each measure. Univariate associations were examined using Point Biserial and Pearson's correlation coefficients. Path analyses assessed the effect of antenatal maternal orientation on maternal feelings of attachment, while holding constant antenatal and postnatal depressive symptomatology. Demographic variables that were significantly associated with self-reported depressive symptoms postpartum or mother-infant attachment in univariate analyses were also included in the model. Two models are presented in this paper: a theoretically driven model

(hypothesised relationships) and a revised model reflecting empirical findings. The significance level was set at $p < .05$.

## Results

### Participants

Of the 218 women who completed requirements at T1 (pregnancy), 196 completed at T2 (postpartum) (89.9%). For the 22 women who did not continue, attrition was due to: inability to contact, *n* = 11, 50.0%, other commitments, *n* = 4, 22.7%, maternal ill-health, *n* = 2, 9.1%, withdrawn consent, *n* = 2, 9.1%, stillbirth, *n* = 1, 4.5%, and relocation, *n* = 1, 4.5%. Women who remained in the study were older *p* = .04, more highly educated *p* = .01, and more likely to have planned their pregnancies, *p* = .00, than those who discontinued. However, they were not significantly different on other demographic variables, on any maternal orientation scale, or on the EPDS at T1 (pregnancy).

The final sample comprised 196 women. Participant characteristics are presented in Table 6.1. Most women were married or in a de facto relationship, spoke only English, had attained a university degree and were expecting their first baby. The majority of women had planned their pregnancy, and a relatively large number had used ART to conceive (*n* = 27, 13.8%), compared with recent estimates of prevalence in the Australian population (4.1%; Li, Zeki, Hilder, & Sullivan, 2012).

### Preliminary Analyses

Table 6.2 provides descriptive statistics in relation to each of the measures. In the current sample, a Facilitator rather than a Regulator orientation was more common in pregnancy, as indicated by the relatively low mean scores on both Regulator subscales and high mean scores on both Facilitator subscales. Furthermore, relative to the range of

possible EPDS scores, women on the whole reported low levels of postnatal symptoms of depression. Mean total attachment scores for the MPAS were within the limits of those published previously with a Belgian sample (*M* = 78.3, *SD* = 4.2; van Bussel et al., 2010b), an Italian sample (*M* = 81.5, *SD* = 6.5; Scopesi, 2004) and an Australian sample (*M* = 84.6, *SD* = 7.0; Condon & Corkindale, 1998).

Table 6.1

*Participant characteristics (N = 196)*

| | | |
|---|---|---|
| T1 (Pregnancy) | | |
| Maternal age | Mean (SD) | 32.4 (4.4) |
| Only English spoken at home | *n* (%) | 157 (80.1) |
| Married or de facto | *n* (%) | 191 (97.4) |
| Tertiary educated | *n* (%) | 149 (76.0) |
| No previous children | *n* (%) | 178 (90.8) |
| Planned pregnancy | *n* (%) | 169 (86.2) |
| Assisted Reproductive Technology | *n* (%) | 27 (13.8) |
| T2 (Postpartum) | | |
| Gestational age at birth | Mean (SD) | 39.5 (1.6) |
| Premature birth (< 37 wks gestation) | *n* (%) | 7 (3.6) |
| Unassisted vaginal birth | *n* (%) | 93 (47.4) |
| Boy infant | *n* (%) | 103 (52.6) |
| In paid work | *n* (%) | 18 (9.2) |
| Infant feeding type | | |
| Breastmilk exclusively | *n* (%) | 121 (61.7) |
| Formula milk (with or without breastmilk) | *n* (%) | 71 (36.2) |
| Solid foods offered | *n* (%) | 196 (100.0) |

Table 6.2

*Psychometric Properties of the Maternal Orientation scales (AMOM-R, PPQ subscales), the Edinburgh Postnatal Depression Scale (EPDS) and the Maternal Postnatal Attachment Scale (MPAS), N = 196*

| | | | | | | Range | | |
|---|---|---|---|---|---|---|---|---|
| | Items | $\alpha^a$ | *M* | *SD* | *Mdn* | Potential | Actual | Skew |
| T1 (Pregnancy) | | | | | | | | |
| AMOM-R Regulator | 8 | .56 | 18.61 | 6.06 | 18.5 | 0–48[b] | 3.0–34.0 | –.02 |
| AMOM-R Facilitator | 10 | .62 | 40.31 | 6.43 | 40.0 | 0–60[b] | 24.0–56.0 | –.18 |
| PPQ Regulator[c] | 5 | .71 | 1.18 | 1.67 | .5 | 0–15 | 0–7.5 | 1.59 |
| PPQ Facilitator | 5 | .74 | 10.08 | 2.90 | 10.5 | 0–15 | 2.5–15.0 | –.48 |
| EDPS[c] | 10 | .85 | 5.27 | 4.25 | 5.0 | 0–30 | 0–26.0 | 1.32 |
| T2 (Postpartum) | | | | | | | | |
| EDPS[c] | 10 | .83 | 4.72 | 3.86 | 4.0 | 0–30 | 0–21.0 | 1.01 |
| MPAS | 19 | .79 | 82.75 | 7.23 | 83.6 | 19–95 | 54.3–95.0 | –.88 |

*Note:* [a]Cronbach's alpha. [b]The range of possible scores on the AMOM-R is greater than that published in Roncolato and McMahon (2011) due to the addition of a neutral response option. [c]Shows values prior to square root transformation.

**Bivariate Analyses**

All maternal orientation subscales (pregnancy) were moderately correlated with reported perinatal depressive symptoms (pregnancy, postpartum) and maternal subjective feelings of attachment (postpartum), in the direction expected by theory, with the exception of the PPQ Facilitator subscale and the EPDS postpartum (see Table 6.3).

Women with a more Regulator orientation (irrespective of the maternal orientation measure considered) reported more symptoms of depression prenatally and postnatally, and gave a less positive evaluation of their bond with their infant (lower scores on the MPAS). In relation to demographic variables, those with more than one child reported more postnatal depressive symptoms, whereas older mothers, those more highly educated, and those who had not planned their pregnancies, had less positive evaluations of their attachment to their infants (lower scores on the MPAS).

**Path Analyses**

We tested a model formulated from the theoretically derived model (Figure 6.1).

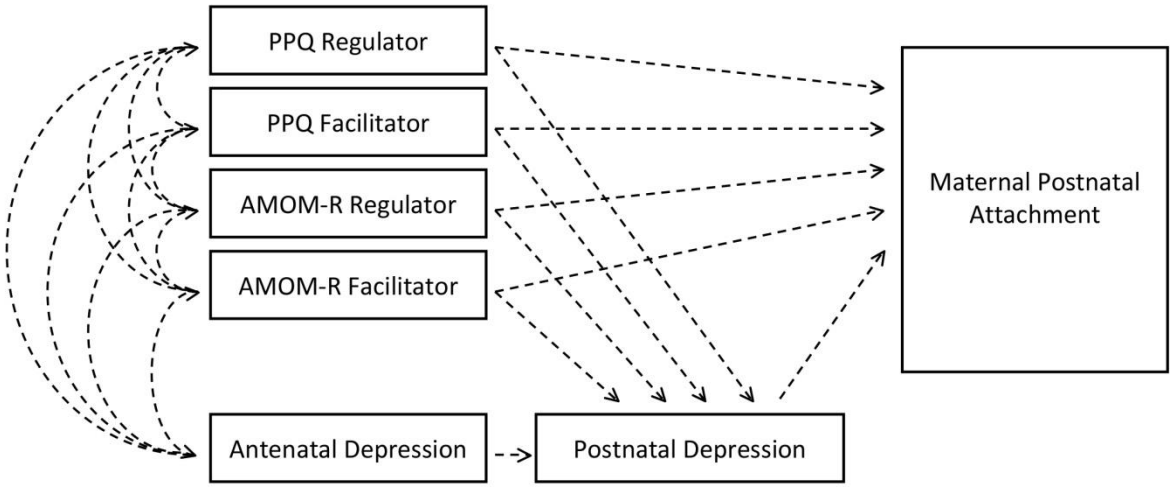


*Figure 6.1*

Theoretical model illustrating the impact of maternal orientation on mothers' feelings of depression and attachment toward their infants postpartum

Table 6.3

*Point Biserial and Pearson Correlation Coefficients among Maternal Orientation, Maternal Symptoms of Depression, Maternal Subjective Postnatal Attachment, and Demographic Variables (N = 196)*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. AMOM-R Regulator | - | –.38** | .48 ** | –.22* | .34 ** | .27 ** | –.30 ** | .14 * | .17 * | –.07 | –.06 | .09 | .07 | –.00 | –.06 | .02 | –.01 | .21** |
| 2. AMOM-R Facilitator | | - | –.25** | .51 ** | –.24 ** | –.19* | .34 ** | –.17 * | .01 | –.16 * | .04 | –.11 | –.04 | –.09 | –.02 | –.06 | .05 | –.05 |
| 3. PPQ Regulator[a] | | | - | –.23** | .44 ** | .29 ** | –.36 ** | .00 | .07 | .03 | .10 | .11 | .09 | –.02 | –.06 | .03 | .02 | .00 |
| 4. PPQ Facilitator | | | | - | –.22 * | –.09 | .25 ** | –.09 | .21 ** | –.02 | –.10 | –.13 | –.02 | .01 | –.02 | –.05 | .02 | .04 |
| 5. EPDS antenatal[a] | | | | | - | .53 ** | –.39 ** | .04 | .02 | .04 | .12 | .14 * | –.01 | .00 | –.06 | –.02 | –.01 | –.02 |
| 6. EPDS postnatal[a] | | | | | | - | –.53 ** | .10 | –.00 | .06 | .15 * | .12 | .06 | .08 | –.09 | .11 | –.04 | .09 |
| 7. MPAS | | | | | | | - | –.14 * | –.03 | –.20 ** | –.02 | –.15 * | –.12 | –.03 | –.01 | –.04 | .06 | –.08 |
| 8. Maternal age | | | | | | | | - | .16 * | –.05 | .17 * | –.08 | .27 ** | .12 | –.05 | .12 | .04 | .14 |
| 9. Language spoken | | | | | | | | | - | .07 | .11 | .06 | .02 | –.17* | –.14 | .06 | –.12 | .08 |
| 10. Maternal education | | | | | | | | | | - | –.03 | –.12 | .05 | .04 | –.05 | .11 | –.20 ** | –.13 |
| 11. Parity | | | | | | | | | | | - | .23 ** | –.08 | –.10 | –.13 | .13 | .09 | .03 |
| 12. Planned pregnancy | | | | | | | | | | | | - | –.16* | .03 | –.04 | .08 | .14 | .22** |
| 13. ART | | | | | | | | | | | | | - | –.01 | .03 | –.01 | .03 | .14 |
| 14. Birth | | | | | | | | | | | | | | - | .08 | .14 * | –.08 | .07 |
| 15. Gestational age | | | | | | | | | | | | | | | - | –.01 | .02 | –.06 |
| 16. Gender | | | | | | | | | | | | | | | | - | –.05 | .01 |
| 17. Work | | | | | | | | | | | | | | | | | - | .05 |
| 18. Infant milk feeding type | | | | | | | | | | | | | | | | | | - |

*Note:* [a]Transformed data. EDPS = Edinburgh Postnatal Depression Scale, MPAS = Maternal Postnatal Attachment Scale, Language spoken = English only vs. English and other, Maternal education = secondary vs. tertiary, Parity = nulliparous vs. primiparous/multiparous, Planned pregnancy = planned vs. unplanned pregnancy, ART (Assisted reproduction Technology) = medically assisted vs. unassisted conception, Birth = vaginal unassisted vs. vaginal assisted/caesarean section, Gender = baby gender: female vs. male, Work = paid work: no paid work vs. paid work, Infant milk feeding type = breastmilk exclusively, formula milk with or without breastmilk.

* $p < .05$; **$p < .001$.

To this model, we added demographic variables found to influence either a mother's postnatal symptoms of depression or her feelings of attachment toward her baby postpartum (see Table 6.3), namely maternal age, education, parity and planned pregnancy.

The revised trimmed model (see Figure 6.2) includes only the variables and paths that offer a unique contribution to the explanation of differences in symptoms and maternal attachment evaluations. The revised model fits the data well (see fit statistics provided on Figure 6.2) and maintains all the significant associations of the theoretical model when the four related demographic variables are included.

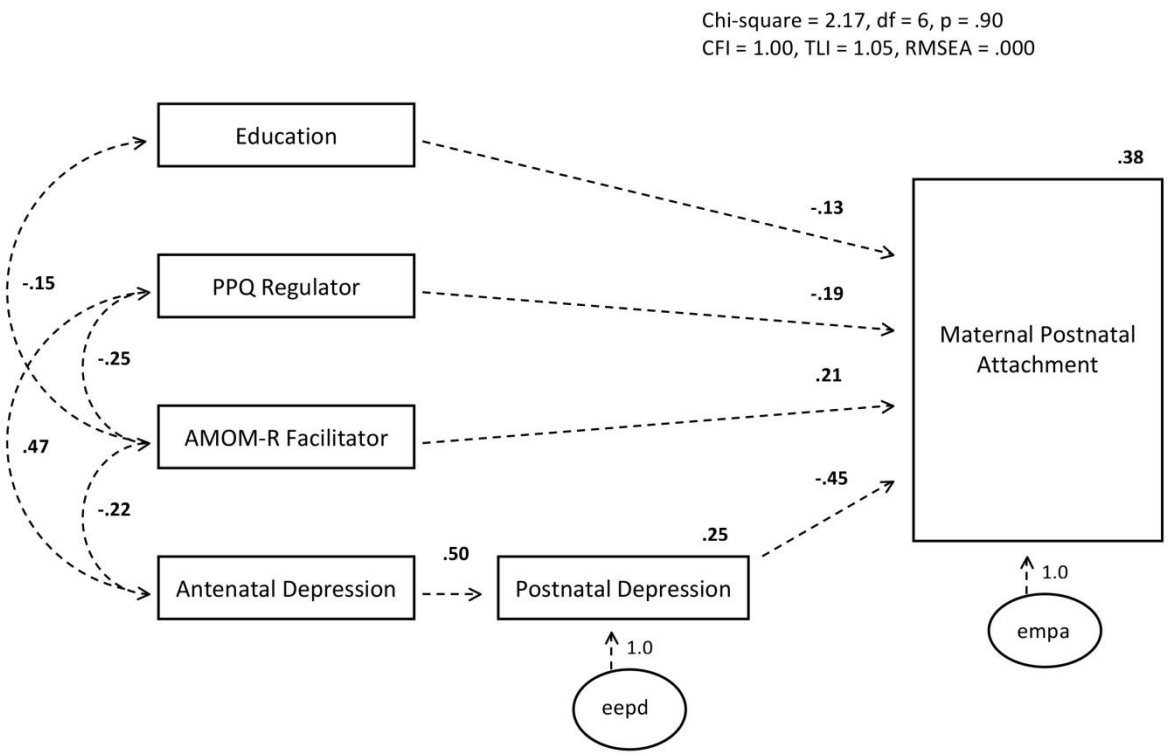


*Figure 6.2*

Trimmed model showing the effect of level of education, antenatal maternal orientation (PPQ Regulator scale, AMOM-R Facilitator scale), and depressive symptoms on mothers' postnatal feelings of attachment toward their infants

The best predictor of postnatal depression was antenatal depression. Those highly symptomatic in pregnancy tended to be highly symptomatic postnatally. When prenatal mood was taken into account in path analysis (see Figure 6.2), maternal orientation variables did not explain any additional variance in postnatal symptoms.

In relation to maternal postnatal attachment, however, women higher on Regulator tendencies reported less positive feelings of attachment toward their babies even after taking into account all other variables in the model. It is noteworthy that the indirect effect of antenatal depressive symptoms via postnatal depressive symptoms explained the most variance in reported attachment. High scores on the EPDS in pregnancy predicted higher scores postnatally, which in turn predicted less positive evaluations of mother-infant bonding. In addition, women who were more highly educated reported lower attachment to their infants.

## Discussion

This prospective study aimed to determine whether a woman's maternal orientation in pregnancy is related to her adjustment to mothering in the early postpartum months, indexed by postnatal symptoms of depression and her subjective feelings of attachment toward her infant postpartum. As predicted, we found a more Regulator orientation was associated with less positive adjustment in pregnancy and postnatally. Specifically a more Regulator orientation in pregnancy was associated with more antenatal and postnatal symptoms of depression, but did not predict postnatal depressive symptoms when antenatal depressive symptoms were considered. Further, a more Regulator orientation in pregnancy predicted less positive feelings towards the baby at 3-months postpartum, even when taking account of both pregnancy and postnatal symptoms of depression.

**Maternal Orientation and Symptoms of Depression (T1 pregnancy, T2 postpartum)**

All measures of antenatal maternal orientation were moderately associated with reported depression in pregnancy. Further, antenatal maternal orientation predicted maternal symptoms of depression postpartum for all measures, with the exception of the PPQ Facilitator subscale. In general, these results are consistent with prior findings (Sharp & Bramwell, 2004; van Bussel et al., 2009a) except for Chapter 4, which found no link between postnatal maternal orientation and postnatal maternal feelings of well-being (Roncolato & McMahon, 2013). Findings in the latter study may be due to the concurrent measurement of maternal orientation and well-being, the use of a different maternal orientation measure (FRQ), and/or because symptoms of depression were not targeted specifically. In the current study, however, when antenatal depressive symptoms were taken into account, contrary to the findings of Sharp and Bramwell, (2004) and van Bussel et al. (2009a), neither the Facilitator nor the Regulator subscales accounted for any unique variance in postnatal depressive symptoms. Nevertheless, these findings suggest that a woman's views on pregnancy, her infant and motherhood are related to her affective state in pregnancy and postpartum.

**Maternal Orientation and Subjective Attachment to the Infant (T2 postpartum)**

As expected, all measures of antenatal maternal orientation predicted the bond a mother felt toward her baby in the early postnatal period. This is not surprising, given that there are commonalities between attachment theory (e.g., Bowlby, 1979, 1980), and maternal orientation theory (Raphael-Leff, 2009). Both identify the mother-infant caregiver relationship as the basis for the development of internal working models and psychological defenses, which operate at an unconscious level to influence caregiving style (Bowlby, 1980;

Raphael-Leff, 1985a, 2009). The association between a more Regulator orientation in pregnancy and less positive reports about being with the infant might be a product of different maternal representations of the infant and related caretaking practices. Women with a more Facilitator orientation, inclined to see the infant as a person from the beginning, may seek meaningful communication from early in the infant's life and those with a more Regulator orientation may be inclined to promote infant independence and engage in less interaction. Antenatal maternal orientation uniquely predicted mother's subjective experience of her relationship with her infant postpartum even when pregnancy and postnatal mood effects were taken into account, confirming the importance of considering a woman's prenatal cognitions regarding motherhood and infants.

Interestingly, we found that women who were higher in education gave less positive accounts of their subjective attachment to their infants. These findings are comparable to those found by van Bussel (2010b). Although this may reflect actual differences in the mother-infant bond, several other interpretations are possible. It may be that women with higher education are more critical and set higher standards for themselves in the maternal role or are more conflicted about relinquishing other roles (such as career) than those with lower educational attainment.

**Strengths and Limitations**

The current study has several strengths. By using path analysis and a large sample of women, we were able to confirm previously well-established relationships between antenatal and postnatal symptoms of depression and between maternal depression and subjective feelings toward the baby, whilst taking account of a large number of variables that could influence a mother's adjustment to parenting in the early months. Our findings regarding the

predictive validity of maternal orientation in pregnancy can be regarded as robust in the context of these other variables.

We acknowledge limitations regarding generalisability of findings given that the majority of women had partners, were highly educated and spoke only English. However, maternal orientation did differentiate among women within the sample despite demographic homogeneity and limited variability in symptoms of depression and mother-infant reported attachment. This was in general, a well-adjusted sample. Furthermore, given that Raphael-Leff used a similar sample of highly educated British women when elaborating her theory, we were provided with an opportunity to test the theory within a similarly matched demographic sample. Nonetheless, further research on more diverse samples is warranted.

Several other factors could be considered in the formulation of a more comprehensive model of maternal depression and subjective mother-infant attachment. Rowe and Fisher (2010) listed several common risk factors for depression in the postnatal period: a history of psychiatric illness, recent adverse life events including a difficult birth or perinatal experience more generally, limited social support in addition to issues in the intimate partner relationship, and poor physical health. These factors could independently and conjointly predispose a mother to depression and/or anxiety and influence her relationship with her infant, particularly when exacerbated by unsettled infant behaviour, issues with infant feeding or sleep, and prolonged exhaustion in the mother (Kurth et al., 2011).

As we relied solely on self-report measures, more objective measures such as observations of maternal sensitivity during interactions with infants could provide additional information on the mother-infant relationship. Furthermore, we did not consider infant

outcomes or the potential for infant temperament to influence maternal feelings of depression (Britton, 2011), or moderate a mother's felt attachment toward her infant. According to theory, the Facilitator visualises an infant who is like her own baby-self and in tune with her own being, whereas the Regulator imagines an infant who is in competition with her own resources and in need of containment (Raphael-Leff, 1995). In reality, the infant of either mother could be quite different. Moreover, the association between maternal orientation and infant factors could be investigated with regard to emotion regulation and ongoing infant development.

Maternal orientation and antenatal symptoms of depression were measured concurrently. Consequently, we cannot be certain whether a woman's feelings of depression at the time of testing influenced her orientation to her infant and motherhood, or whether this orientation was in part responsible for her mood. The fundamental assumption of cognitive behavioural models is that cognitions have a major impact on mood and behaviour (Hofmann, Asmundson, & Beck, 2013). Therefore it is plausible that a woman's working model of mothering, as represented by her maternal orientation, could influence both her mood in pregnancy and postpartum, as well as her attachment to her infant. If this were the case, then maternal orientation could be seen as not only related to maternal mood but a primary driving force behind a woman's adjustment to motherhood. Certainly, Raphael-Leff (1983; 2009) describes maternal orientation as a concept that includes cognitive, emotional and behavioural components.

Furthermore, as postnatal depressive symptoms and maternal subjective attachment to the infant were also gauged at the same time, it was not possible to determine whether one predated the other. Based on previously reported findings, we assumed that more

feelings of depression lead to less positive mother-infant relationship appraisals. However, we acknowledge that the mother-infant relationship in itself can be a stressor predisposing a mother to depression and anxiety (Cramer, 1993). To disentangle these causal relationships, future studies would need to assess maternal orientation prior to or very early in pregnancy and also collect measures of maternal depression prior to assessing postnatal reported attachment. Repeat testing of the EPDS postpartum could also allow differentiation between those with transient and more enduring symptoms (Matthey, 2010).

## Clinical Implications and Conclusions

The early postnatal months are a crucial and defining time for the mother-infant attachment relationship (Cramer, 1993). Antenatal maternal orientation may be considered a valuable addition to well-established perinatal screening programs (e.g., Austin, Hadzi-Pavlovic, Saint & Parker, 2005; Buist et al., 2006) providing information about potentially problematic cognitions as well as a mother's preferred approach to babycare postpartum. Such information is useful not only to identify those at risk of poor maternal adjustment, but also to tailor specific interventions to promote psychological preparedness for the arrival of the infant while acknowledging that women mother in different ways. Certainly, recent research investigating different yet equally effective techniques for improving infant sleep has acknowledged that parents should be supported to choose settling methods in concordance with their parenting ideals (Matthey & Črnčec, 2012). While respecting the preference for shared care and more predictable daily babycare routines, education about the nature of young infants, their capacities for communication and meaningful interaction are likely to be particularly important in helping those with a more Regulator orientation to establish a relationship with their young infants.

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# CHAPTER 7

# Discussion

# Discussion

This thesis sought to examine whether dimensions of maternal orientation measured in pregnancy and postpartum can meaningfully discriminate among women in terms of their infant caregiving practices and their adjustment to mothering. Taken together, the findings indicate that maternal orientation offers a promising conceptual framework from which to understand these individual differences across the perinatal period, but with some qualification. This chapter first examines the strengths and major contributions of this research, then limitations and directions for future research, followed by implications for theory, construct measurement, and community health and clinical domains.

## Strengths and Major Contributions of the Research

Appreciating individual differences is crucial to fully understanding experiences of motherhood. The theory of maternal orientation offers a coherent framework to conceptualise the inner psychological world of women from pregnancy to the early postpartum period. While the theory has intuitive and clinical appeal, establishing solid empirical support for the core propositions has proven challenging. While there are relatively few published studies, several different ways to measure the construct have evolved, with little empirical validation, making it difficult to compare findings across studies. This thesis aimed to address measurement issues and extend the empirical support for the theory with four sequentially conducted investigations.

Three large samples of Australian women participated in the research, which had both cross-sectional and longitudinal components. Two exploratory studies examined the experiences of pregnancy and early motherhood in isolation, and two subsequent prospective studies followed women from pregnancy through to the early months

postpartum. Maternal orientation was assessed in multiple ways using all available tools so that psychometric properties could be compared. Investigations of construct validity involved varied methods: bivariate correlations with theoretically related constructs, and multiple regression and path analysis in prospective studies. Multiple contextual factors were included so that findings specific to maternal orientation could be better identified. The next section discusses the major conclusions that can be drawn from study findings in the context of previously published research.

***Antenatal Maternal Orientation Measure-Revised (AMOM-R).*** At the time this research began the Antenatal Maternal Orientation Measure (AMOM; Sharp & Bramwell, 2004) was the only measure of maternal orientation to include multiple aspects of maternal orientation theory, incorporating domains of caregiving and maternal adjustment. In the current thesis, with the approval of the author (H. M. Sharp, personal communication, December 19, 2009), some modifications were made to enhance its utility and validity. The modified version, the Antenatal Maternal Orientation Measure-Revised (AMOM-R) is recommended for future research as this measure, as well as demonstrating adequate reliability, yielded the most theoretically expected associations with related variables, when compared with the FRQ (prenatal and postnatal forms; Raphael-Leff, 2009) and the PPQ Facilitator and Regulator subscales (Raphael-Leff, 2009; van Bussel, 2009).

When considering only concurrent relationships in pregnancy, both the AMOM-R Facilitator and Regulator scales were related to parity, pregnancy planning, current work status and flexibility/rigidity of parental beliefs, in the direction expected by theory. The AMOM-R Regulator scale was also related to adult attachment style. Regulator tendencies were expected to be associated with more avoidance in close intimate relationships

(Raphael-Leff, 1995). However, women with a more Regulator orientation in pregnancy were not only higher on dimensions of avoidance, but also higher on anxiety with regard to intimate relationships. This suggests that the Regulator orientation may indeed represent a fear of loving, as Raphael-Leff (1986) surmised.

In prospective studies, the AMOM-R was the only measure of maternal orientation that predicted both caregiving practices and maternal adjustment postpartum. The AMOM-R Regulator scale assessed in pregnancy was associated with infant caregiving practices, even when controlling for infant feeding type (breastmilk and/or formula milk). In regard to maternal adjustment, both the AMOM-R Facilitator and Regulator scales were correlated with mothers' feelings of depression in pregnancy and postpartum, as well as mothers' feelings of attachment to their infants postpartum. Consistent with theoretical predictions (Raphael-Leff, 1983, 1985b) and prior research (Sharp & Bramwell, 2004; van Bussel, Spitz, & Demyttenaere, 2009a) a more Regulator orientation was associated with more depressive symptoms at both timepoints, as well as lower reported attachment to the baby. Additionally, the AMOM-R Facilitator scale offered a unique contribution to the explanation of maternal attachment to the infant postpartum, even when antenatal and postnatal depressive symptoms were taken into account. More Facilitator tendencies were associated with more positive maternal subjective attachment to the infant as expected.

These results appear congruent with one prior study that assessed attachment security using the Strange Situation Procedure (Ainsworth, Blehar, Waters, & Wall (1978). Scher (2001) reported that women classified as Facilitators at 6-months postpartum (with the 3-item FRQ) were more likely to have securely attached infants at 12 months of age. Findings linking secure attachment to a Facilitator orientation are not surprising in the context of

theoretical propositions that the Facilitator orientation is in part defined by ascribing personhood and individual characteristics to the infant from a very early age (even prior to birth). A large body of work has demonstrated that mothers who think of the infant as an individual are more likely to behave sensitively toward the infant and, in turn, develop secure attachment relationships (e.g., Meins et al., 2012).

Next, results in relation to caregiving practices and maternal adjustment are considered in the context of existing empirical evidence, followed by the implications of those combined findings for maternal orientation theory.

***Findings related to infant caregiving and maternal adjustment.*** Raphael-Leff (1983, 2009) proposed that a woman's caregiving practices and her maternal adjustment are manifestations of underlying intrapsychic processes. As the theory (and many of the questionnaire items to assess the construct) are partly defined by attitudes toward infant feeding, this thesis aimed to examine whether maternal orientation could also explain individual differences in caregiving practices surrounding the management of infant sleeps (Chapters 4 and 5). In addition, maternal adjustment was assessed using multiple indices including maternal subjective well-being (Chapter 4), maternal symptoms of depression and maternal feelings of attachment to their infants postpartum (Chapter 6). While these propositions were for the most part supported, results were not consistent across the different measures of maternal orientation. The mixed findings might reflect the different item content of each maternal orientation measure, and when maternal orientation was assessed: whether during pregnancy or postpartum. Nevertheless, these discrepant findings have implications for maternal orientation theory.

*Infant caregiving practices.* Apart from Raphael-Leff's early publications elaborating the Facilitator and Regulator profiles from clinical experience and small-scale empirical studies (Raphael-Leff, 1983, 1985a, 1985b), only one other paper has focused explicitly on caregiving practices in relation to maternal orientation. In the context of investigations into infant night waking, Scher and Blumberg (1999) classified maternal orientation (using the 2-item FRQ) at 6-months postpartum, and compared subsequent pacifier/bottlefeeding vs. infant finger sucking in relation to sleep settling at 12-months postpartum. Maternal orientation did not predict either of these sleep-settling behaviours.

In the current research, when maternal practices surrounding infant sleep and maternal orientation were examined concurrently (FRQ postnatal form), findings were in line with theory. As expected, more Facilitator tendencies (and less Regulator tendencies) were associated with a greater likelihood of room sharing and co-sleeping, more frequent intervening to help infants settle to sleep, and a low reported incidence of leaving the infant to cry. Furthermore, concordant findings related to the FRQ (postnatal form) and caregiving practices postpartum were generated across two separate studies with two different samples (Chapters 4 and 5). These findings support Raphael-Leff's theory that maternal orientation is linked to specific caregiving practices, and extends this work by revealing that mothers who scheduled infant feeds also often scheduled infant sleeps. It is perhaps not surprising that the FRQ (postnatal form), a measure comprised largely of items that explicitly target caregiving practices, was related to reported caregiving practices. However, these relationships remained significant even when infant feeding type and other contextual factors that may influence sleep practices were taken into account.

As both maternal orientation and caregiving practices were measured at the same time, it was not possible to ascertain the direction of effect. Mothers' reporting of their maternal orientation may have been influenced by the caregiving methods they were using with the infant at that time. Associations between maternal orientation in pregnancy and caregiving practices postpartum would provide more convincing evidence that maternal orientation informs caregiving.

Prospective findings were mixed, however. When maternal orientation was measured during pregnancy (AMOM-R, PPQ subscales), only the AMOM-R Regulator scale was significantly associated with infant caregiving practices postpartum. In line with the abovementioned concurrent findings, women who had less Regulator tendencies in pregnancy (lower AMOM-R scores) had more flexible timings for infant sleeps as well as infant feeds, and a low reported incidence of leaving their infant to cry. In addition, less Regulator tendencies were associated with higher rates of breastfeeding exclusively (no formula milk) at 6-months postpartum. However, the AMOM-R Regulator scale accounted for less variance in scheduling of feeds and sleeps than did the FRQ (postnatal form), and there was no association with mother-infant sleeping arrangements. Perhaps not surprisingly, for the most part, the relationship between maternal orientation and caregiving practices appeared to be stronger in concurrent analyses than with prospective analyses.

In summary, concurrent associations were found for maternal orientation and caregiving practices, but perhaps more compelling were prospective associations between antenatal maternal orientation (AMOM-R Regulator subscale) and infant feeding and sleeping practices. Apart from Raphael-Leff's own work (1985b), these findings are the first to our

knowledge to confirm prospective associations, between antenatal maternal orientation and postnatal caregiving practices in line with maternal orientation theory.

*Maternal adjustment.* Although associations were found between maternal orientation and maternal adjustment, the results were not consistent across maternal orientation measures. Contrary to expectation, postnatal maternal orientation (FRQ postnatal form) was not associated with maternal subjective well-being postpartum. Despite postnatal maternal orientation predicting differences in caregiving practices, holding more of a tendency toward one orientation or the other made no difference to a woman's reported experience of motherhood. Maternal subjective well-being was measured by items assessing self-reported coping and emotional well-being (EMQ; Astbury, 1994). Women with tendencies toward either the Facilitator or Regulator orientations were equally satisfied in the mothering role.

These findings were somewhat unexpected, as previous research has linked a more Regulator orientation with a greater incidence of depressive symptoms (Sharp & Bramwell, 2004; van Bussel et al., 2009a). The discrepancy might be due to the fact that maternal subjective well-being is a more general measure than one assessing depressive symptoms. Another possible explanation relates to the measurement of maternal orientation. In Chapter 4, maternal orientation was measured with the FRQ (postnatal form), whereas previous studies by Sharp and Bramwell (2004) and van Bussel et al. (2009a) used the AMOM and the PPQ subscales, respectively, both of which have a broader focus including items related to maternal affect. Finally, maternal orientation and subjective well-being were examined concurrently rather than prospectively. It is possible, as noted above, that maternal caregiving practices (perhaps adopted for pragmatic reasons) influence reported

maternal orientation, and that if women were able to mother in a manner consistent with their preferred orientation, they felt satisfied they were managing well.

Certainly, Matthey and Črnčec (2012) have implied that women may be more content if they are supported in choosing childcare methods in line with their own philosophy of parenting. Indeed, Raphael-Leff (1985b) pointed out that each orientation (particularly at the extremes) posed different vulnerabilities for postnatal distress. Facilitators, if an early return to paid work was necessary, could manifest symptoms of depression due to the enforced separation from their infant. Conversely, Regulators not permitted to rejoin the workforce could feel stagnated and trapped. This explanation fits well with the findings of van Bussel, Spitz, and Demyttenaere (2009b) who found anxiety experienced by Facilitators is specific to separation anxiety in the postpartum period, whereas Regulators are more susceptible to anxiety during pregnancy, perhaps owing to concerns over their loss of independent status.

However, when we consider findings in relation to antenatal maternal orientation (AMOM-R, PPQ subscales), maternal orientation was associated with maternal depressive symptoms both concurrently in pregnancy and prospectively at 3-months postpartum, in accordance with theory. Although it should be noted that when antenatal maternal orientation was taken into account, unlike the findings of Sharp and Bramwell (2004) and van Bussel et al. (2009a), postnatal maternal orientation did not account for any additional variance in postnatal depressive symptoms.

Perhaps of most interest with respect to maternal orientation theory is the finding that antenatal maternal orientation was associated with maternal feelings of attachment toward the infant postpartum. All measures of maternal orientation in pregnancy were moderately correlated with mothers' feelings of attachment toward their infants postpartum.

Furthermore, the AMOM-R Facilitator scale and the PPQ Regulator scale offered unique contributions to the explanation of maternal feelings toward the infant over and above that already explained by antenatal depression and postnatal depression. Therefore, the way a mother views her infant and the mothering role during pregnancy does influence her maternal adjustment postpartum, as specified by maternal orientation theory (e.g., Raphael-Leff, 1983, 1995, 2009).

***The stability of maternal orientation.*** There were small to moderate correlations among all three of the measures of maternal orientation, even among prenatal and postnatal measures, despite very different item content across the measures. These associations provide modest support for both the multifaceted nature of the maternal orientation construct and for the stability of maternal orientation from pregnancy to the postnatal period. However, given there is no one reliable measure of maternal orientation for assessment in both pregnancy and postpartum, and as maternal orientation was only assessed twice (before and after the birth), these findings can at best offer only preliminary evidence.

It does appear, however, that some movement in maternal orientation was likely to have occurred when results related to caregiving practices and maternal subjective well-being are considered together (Chapters 4 and 5). The fact that concurrent maternal orientation was found to be more associated with certain parenting practices than antenatal maternal orientation could mean that some mothers may vary their orientation across the perinatal period. Furthermore, the lack of association between postnatal maternal orientation and subjective well-being might reflect the fine-tuning of attitudes to be in line with infant care practices, and the relatively positive well-being that resulted (in Chapter 4)

may be the result of this adaptive response. Indeed, the capacity to adapt over time to circumstances and infant factors has been considered a determinant of responsive mothering associated with the successful transition to motherhood (Heinicke, 2002). This interpretation, however, is speculative. Investigations would need to include a valid measure of maternal orientation that has complementary prenatal and postnatal versions to track changes in maternal orientation over time.

***Confounding variables.*** In this study, a wide range of potentially confounding variables were considered and several relationships emerged that are worthy of comment. Although a Facilitator orientation was the most frequently endorsed across all studies, Regulator tendencies in pregnancy were more prevalent among women expecting their first child, compared with those who already had a child. These findings were comparable with previous studies (Raphael-Leff, 1985b; Scher & Blumberg, 1992). A more structured approach to mothering with prescriptive and clear instructions might be attractive to novices, with some hope of maintaining control and predictability. New mothers might feel less anxious with the hope (whether accurate or not) of being guided in very clear terms: what to do and when. Conversely, it may be that mothers of multiple children find it more difficult to adhere to a structured routine when there are other children's needs to take into consideration.

Feeding is closely entwined with maternal orientation, so care was taken to adequately account for the influence of breastfeeding. Several feeding-related associations with other confounding variables were noted. Exclusive breastfeeding was more prevalent for those with a higher educational attainment. Women with more education might have a greater awareness of maternal and infant health benefits related to breastfeeding in the first

6 months (Brown, Raynor, & Lee, 2011; McNeill, Labbok, & Abrahams, 2010). Breastfeeding was also consistently associated with a closer mother-infant proximity overnight, both through room sharing and co-sleeping, most likely related to the fact that the nature of breast milk and necessity to maintain supply are accompanied by recommendations to feed more frequently (Walker, 2011). These results confirm previous research (Ball, 2007; Blair, Heron, & Fleming, 2010; Goldberg & Keller, 2007) and attest to the fact that co-sleeping is prevalent and may enhance breastfeeding success (McKenna & McDade, 2005).

Mothers' current work status was also associated with co-sleeping. Those who were working full-time commonly shared a bed with their infant. These results were replicated across two studies (Chapters 4 and 5) with independent samples, and were consistent with previous findings (Ball, 2002; McKenna & Volpe, 2007). It is plausible that mothers working full-time may have chosen to sleep close to their infants to make up for time spent apart during the day time, or with the aim of minimising the duration of interruptions to maternal sleep overnight. In addition, mothers from a non-English speaking background and those with lower educational attainment were more likely to share a room with their infant, perhaps due to limited rooming options or influences specific to culture.

Finally, women with a higher educational attainment gave less positive accounts of their subjective attachment to their infants. Van Bussel, Spitz, and Demyttenaere (2010b) found the same result. Although this may reflect actual differences in the mother-infant bond, several other interpretations are possible. It may be that women with higher education are more critical and set higher standards for themselves in the maternal role or are more conflicted about relinquishing other roles (such as career) than those with lower educational attainment. Alternatively, they may be more likely to answer honestly

acknowledging the normal ambivalence of motherhood rather than in a socially desirable way (Reck et al., 2006).

As the majority of these results replicate previous findings, future studies investigating maternal orientation or those focusing on infant feeds and sleeps would do best to account for these established relationships.

**Limitations and Directions for Future Research**

Maternal orientation theory offers a model to explain individual differences in women's intrapsychic processes across the perinatal period. Therefore, it does not attempt to include influences external to the mother. However, if one was to attempt to understand the experience of becoming a mother in full, other factors are crucial to consider. Of course a woman does not make this transition in isolation. Belsky (1984) in his seminal model of the determinants of parenting identified three key sources of influence: (a) the parent's personality or psychological resources, (b) infant characteristics and (c) contextual factors that can cause stress, including marital relationships, previous experience and the social network. Although this research sought to account for a broad range of demographic, pregnancy-related and psychosocial factors, several omissions are acknowledged, in particular, infant factors and social support. In addition, the possible impact of social desirability and the relatively homogeneous sample are discussed, as well as the lack of findings in relation to the birth experience.

***Infant factors.*** Infant temperament can influence the way a woman mothers, and have a considerable impact on her experience of mothering in the early months. Some infants can be more unsettled than others and require greater effort on the part of the mother to settle and soothe them (e.g., Papousek & von Hofacker, 1998; Wurmser,

Laubereau, Hermann, Papousek, & von Kries, 2001). These infant characteristics may be due to a range of factors including infant temperament and infant health.

The degree to which the mother is able to settle her baby can determine her evaluations of competence and coping, frequency of feeding and proximity of sleeping, and can have an impact on her mental health and her feelings toward her infant. Maternal orientation could moderate these effects. A Facilitator may cope better with the demands of an unsettled infant because these mothers enjoy intimacy and closeness. In contrast, a Regulator mother might find the extra attention needed a drain on her internal resources, and extreme crying as persecutory. Although, infant behaviour does not always reflect parenting factors (Rowe & Fisher, 2010), it is also possible that maternal orientation could influence infant behaviour. Milgrom, Westley, and McCloud (1995) found that infants of mothers with depression cried significantly more than infants of non-depressed mothers at three months of age. Responsive and sensitive caregiving could help reduce unsettled behaviour even in more fractious infants, whereas insensitive and poorly attuned caregiving could cause further infant distress. Consistent with research into attachment security, an infant who is quickly soothed may learn to trust that their adult carer will attend to their needs in the future (e.g., Davidov & Grusec, 2006; Del Carmen, Pedersen, Huffman, & Bryan, 1993; Susman-Stillman, Kalkoske, Egeland, & Waldman, 1996). To unravel these complex associations, future research could examine the interplay between infant temperament and maternal sensitivity in the context of maternal orientation classifications.

***Social support.*** Although marital status was considered, no detailed assessment of the quality of the marital relationship and available social support was included. A mother's network of family and friends could be instrumental in helping her manage day-to-day

caregiving duties and may provide at least one confidant to support her emotionally, ideally providing reassurance and recognition for her efforts. Of particular importance is the woman's relationship with her partner, the quality of their communication, and the consensus about the division of domestic responsibilities, including caregiving (Cowan & Cowan, 1988; Emmanuel, Creedy, St John, Gamble, and Brown, 2008; Halford, Petch, & Creedy, 2010).

A related aspect may be a mother's feelings of exhaustion. One of the most challenging aspects of mothering can be dealing with interruptions to sleep. Certainly, the early postnatal months can be defined by it (McDaniel & Teti, 2012). Thus a woman's social support could greatly influence both her caregiving practices and her maternal adjustment, in particular her capacity to mother in a manner consistent with her preferred orientation. Women with Facilitator or Regulator tendencies would likely differ in terms of the type of support they desire. Whereas the Facilitator mother is proposed to prefer someone to support her own efforts to mother her infant (presumably by taking care of other daily living tasks), the Regulator is proposed to welcome help directly with caregiving and time away from her infant (Raphael-Leff, 2009). The same support can be considered intrusive or useful depending on these distinct caregiving goals. Although not examined in the current thesis, complementary parental orientations have been described as well as a model of the dynamics between the two partners in the context of parenting (Raphael-Leff, 1985a, 1995, 2009). A study that has more of a focus on couple relationships would allow contributions of the father and the emotional climate created by the couple's relationship to be included.

***Social desirability and prevailing views on "good" mothering.*** It is important to acknowledge that social desirability may have played a part in the responses given by some

of the women, especially in relation to caregiving methods and expressed feelings toward the baby. In regard to infant caregiving practices, some mothers might have felt compelled to give what they considered to be the "correct" answer, if they felt the interviewer had strong views toward a more flexible baby-led or a more structured mother-led approach. As outlined in the introduction of this thesis, the modern experience of mothering exists within a specific social context and what constitutes "good" mothering for each woman might be in part a reflection of her current social network, the books she reads, the online mother baby forums she joins, or the influence of infant care gurus or health professionals. Future studies could attempt to capture these social influences. Nonetheless, reported caregiving practices varied widely.

A Facilitator orientation was the most commonly endorsed in pregnancy and postpartum, irrespective of the maternal orientation measure used. However, in regard to the management of both infant feeds and sleeps, mothers reported the full range of approaches from no schedule at all to strict routines at set times. Mother-infant room sharing was almost as prevalent as sleeping in a separate room, and co-sleeping was quite frequent with approximately one-third of women sharing a bed with their infant at least some of the time. Results related to sleep arrangements were almost identical across two independent samples. Furthermore, although many women intervened to settle their infants to sleep using a range of different hands-on strategies, leaving infants to "cry it out" on occasion was a moderately common practice. Nevertheless, mothering practices may not always be consistent and reports may reflect the mother's philosophy of parenting rather than the methods she actually uses. More objective measures such as videoing of daily mother-infant caregiving interactions and putting the baby to sleep at night, such as those

employed recently by Teti and Crosby (2012), could be considered in future research designs involving maternal orientation.

Secondly, a lack of attachment to one's child is seen as unacceptable in society. Less positive feelings toward the infant can be difficult to contemplate and even more difficult to admit publicly. It is possible some women were not willing to disclose the extent of their negative emotions. In spite of this, however, a considerable range of feelings were reported and the distribution of responses was comparable to that found in previous research with non-clinical samples (Condon & Corkindale, 1988; Scopesi, 2004; van Bussel et al., 2010b). Furthermore, in the current thesis, those with higher educational attainment were found to express more negative feelings toward their infants. As previously noted, this finding might reflect the high standards they hold in regard to the mothering role or alternatively an understanding that maternal ambivalence is normal and natural. More objective evaluations could include observations of mother-infant interaction and provide the opportunity for the assessment of maternal sensitivity.

***Homogeneous sample.*** Despite the multiple methods used for recruitment, we attracted women who were predominantly well-educated and partnered, and the majority identified themselves as Caucasian or English-speaking only. Some participants endorsed one of a wide range of other ethnic backgrounds, but with low numbers representing each, so it was not possible to systematically explore cultural variations in maternal orientation. Furthermore, a certain level of English was required to answer the questionnaire component of the research, which also limited demographic variability.

Raphael-Leff's theory was similarly formulated on the experiences of relatively homogeneous samples of well-educated women residing in London. She argued that early

psychoanalytic theory was also based on therapy with women from a socially advantaged background, and these women have the most choice in regard to childcare practices. Furthermore, as Mein Smith (2012) explained, middle-class women have become the target of childcare gurus and those most likely to deliberate over how to mother. The women who participated may have self-selected because the research questions were relevant to them. To date, research related to maternal orientation has been published with samples from Belgium (van Bussel et al., 2009a, 2009b, 2010a), Israel (Scher & Blumberg, 1992, 1999; Scher, 2001), England (Sharp & Bramwell, 2004) and Scandinavia (Ekström, Matthiesen, Widström, & Nissen, 2005). Nevertheless, future study could test whether the maternal orientation model is applicable to women from other cultural groups and women from more disadvantaged backgrounds.

***The experience of childbirth.*** It was curious that an event as momentous as childbirth was not found to be a principal contributing factor to maternal postnatal functioning. There were no significant findings in relation to the type of childbirth experienced, whether an unassisted birth or a birth involving medical intervention. However, more relevant may be a woman's perception of the birth, whether or not her expectations were met and her overall level of childbirth satisfaction. Certainly, van Bussel et al. (2010a) found, in accordance with maternal orientation theory, that expectations of childbirth can be very different. Women tending toward a Facilitator orientation expected more fulfilment and less distress, whereas those of a more Regulator orientation had expectations of less fulfilment and more distress.

Moreover, although all birth experiences can be enduring, a number of women develop Post-Traumatic Stress Disorder (PTSD) specific to the experience of childbirth (Patrick, Devilly, O'Donovan, Alcorn, & Creedy, 2011). The influence of maternal orientation

on perceptions of the birth experience might be more potent in relation to this disorder. Those of a more Facilitator orientation may be more at risk for psychological trauma as a result of medical intervention, whereas those of a more Regulator orientation might be subject to intense distress if encouraged to birth naturally (Raphael-Leff, 1995). Of great interest would be research into specific fears associated with the birth experience. The AMOM (Sharp & Bramwell, 2004) provides a good starting point to aid in these investigations with items assessing labour and birth, not examined in the current thesis.

**Implications for the Measurement of Maternal Orientation**

As the overarching aim of this thesis was to explicate and extend the interface between theory (of psychoanalytic origin) and the existing empirical work, it was appropriate to use the existing published measures, albeit with some minor modifications, rather than make major alterations to the measures. The AMOM was amended only to the extent necessary to meet this aim. This permitted the replication of existing empirical work with an Australian sample, and an assessment of the relationship among all three measures of maternal orientation, enabling comment in relation to previous research studies. However, this thesis has confirmed that more work is required on the measures before maternal orientation can be considered a robust construct for ongoing scientific inquiry.

Various aspects of reliability and validity were assessed across studies presented in this thesis. The first of four empirical papers (Chapter 3) did explicitly consider psychometric properties of the existing measures in pregnancy given that none had been presented for the AMOM or the 5-item FRQ, and aimed to replicate those reported for the PPQ subscales (van Bussel, 2009). Chapter 4 assessed the construct validity of the postnatal measure (the 5-item FRQ) in relation to caregiving practices and subjective well-being, and Chapters 5 and 6

explored the predictive validity of the construct as operationalized to date. Nevertheless, each of the three measures has its limitations.

***Antenatal Maternal Orientation Measure-Revised (AMOM-R).*** All studies support the Antentatal Maternal Orientation Measure-Revised (Sharp & Bramwell, 2004; Roncolato & McMahon, 2011) as a major empirical contribution to the field. Nevertheless, there are other improvements that could be considered. Further research could examine the factor structures within each of the Facilitator or Regulator scales and confirm the best format for the response sets.

In the current research, internal consistency was higher with a 6-point forced-choice response set, than with a 7-point response set that offered a neutral response option for items despite participant preference for the 7-point scale. Finally, as previously mentioned, AMOM items specific to expectations of labour and birth were omitted based on the findings of Sharp and Bramwell (2004). However, these subscales could be similarly divided into separate Facilitator and Regulator subscales and examined within the context of the childbirth experience.

***Placental Paradigm Questionnaire Facilitator and Regulator subscales (PPQ subscales).*** The PPQ Facilitator and Regulator subscales displayed good reliability consistently across studies but construct validity was more limited, particularly for the PPQ Facilitator subscale. Van Bussel (2009) likewise found lower discriminant validity for the PPQ Facilitator subscale than the Regulator subscale. He also noted that the Facilitator scale largely comprises items related to the experience of being pregnant, whereas the Regulator scale focuses more on the relationship between the mother and the infant *in utero*. In pregnancy, the PPQ Regulator subscale was associated in theoretically expected ways with

adult attachment style, rigidity of parenting beliefs, physical health and antenatal symptoms of depression. In contrast, the PPQ Facilitator subscale was only able to distinguish among women in terms of physical health and antenatal symptoms of depression.

In prospective studies, neither of the PPQ subscales discriminated among women in terms of their caregiving methods postpartum. However, the PPQ Regulator scale was associated with postnatal symptoms of depression and both scales were related to maternal feelings of attachment toward the infant. The PPQ Regulator subscale offered a unique contribution to the explanation of variance in maternal feelings of attachment toward the infant, even when symptoms of depression were taken into account. That contribution was on top of the variance already explained by the AMOM-R. Considering these results collectively, the value of the PPQ Facilitator and Regulator subscales might be best realised as an element of the larger PPQ screening tool developed to detect specific antenatal emotional disturbance. Although some women in our sample did acknowledge that they occasionally experienced the baby *in utero* as a parasite or intruder, and that they sometimes felt unease at sharing their body with their baby, very few indicated that these thoughts were a frequent state of mind. Items of this nature could be more relevant to a clinical population.

The results specific to the PPQ subscales suggest that antenatal symptoms of depression related specifically to the woman's experience of pregnancy and the growing baby *in utero* appear to have a lasting influence on the mother's adjustment postpartum, and are best attended to at the earliest possible opportunity. There is an extensive base of research documenting the importance of antenatal mood for predicting postnatal mood (e.g., Austin et al., 2010; Milgrom et al., 2008). However, in relation to the measurement of psychoanalytic defenses, it remains unclear whether the existence of underlying

psychological processes are truly measured with this self-report instrument since psychological defenses are by definition unconscious processes, with little awareness of their existence in the conscious realm.

***Facilitator Regulator Questionnaire (FRQ prenatal and postnatal forms).*** In regard to the 5-item FRQ (prenatal and postnatal forms), several limitations were discussed in relation to use as a self-administered questionnaire for quantitative research purposes. Although the AMOM-R appears to be a superior alternative to the FRQ (prenatal form), the FRQ (postnatal form) remains the only available option for classifying maternal orientation in the postnatal period. This represents a significant shortcoming with respect to empirical research in the field. A substantial improvement in internal consistency was found for the 5-item FRQ (postnatal form) scale when compared to the original 3-item FRQ (postnatal form). However, for use in large-scale investigations, three additional modifications are recommended.

The first open-ended question regarding daily infant routines and the multiple-choice item concerning feeding schedules could be replaced by a number of more explicitly specified items. Given that we found scheduling of infant sleeps was equally characteristic of a Regulator profile as scheduling of infant feeds, items that detail the use of both infant feeding schedules and sleep schedules could be included. Two novel measures were created specifically for, and utilised in, the current thesis: the Infant Feeding Schedule (IFS) and Infant Sleeping Schedule (ISS). Both were strongly associated with the FRQ (postnatal form). Secondly, more items to explore maternal cognitions and emotions could add to the validity of the measure. Thirdly, two separate Facilitator and Regulator subscales could better account for inconsistencies in endorsement of Facilitator and Regulator orientations and allow Conflicted individuals to be more readily identified and included. In its current form,

the FRQ (postnatal form) may be best used as it was originally intended, as a clinical interview tool used to understand a woman's approach to motherhood, a factor often overlooked when devising treatment plans aiming to improve maternal functioning and increased feelings of competence and coping.

***A New Combined Measure?*** Ultimately, a comprehensive and psychometrically robust measure of maternal orientation for use in both the prenatal and postnatal periods is required. Therefore, a new combined measure with complementary prenatal and postnatal forms may be warranted. Worthington and Whittaker (2006) outline the recommended practice for the development of self-administered questionnaires in the social sciences, and offer a useful framework for developing new measures. Taking the existing items from all three questionnaires as a starting point, one could consider a number of relevant additional well-defined items alongside those previously formulated. Subsequent exploratory factor analysis could help to discern the different factors and refine items for the final measure(s). Given that maternal orientation is theorised as a multidimensional construct, several related factors might emerge including parental practice (schedules and strategies for infant feeding and sleeping), maternal adjustment, and maternal cognitions with exploratory factor analysis using oblique rotation. Decisions regarding factor retention and item deletion in the interest of functional scale length and construct representation could be made with the assistance of independent judges to reduce any possibility of research bias. Confirmatory factor analysis with an independent sample could then verify that the structure remains relatively stable across samples and is satisfactory for future research.

One would also need to consider discriminant validity, assessing the crossover with other related questionnaire tools such as the Maternal Attitudes Questionnaire (MAQ)

(Warner, Appleby, Whitton & Faragher, 1997), and more recently, the Pregnancy Related Beliefs Questionnaire (PRBQ) (Moorehead, Owens & Scott, 2003), both of which assess maternal cognitions.

***The measurement of Conflicted individuals and possible psychopathology.*** The Conflicted individuals were not a focus of the current thesis. Currently, there is limited information on the characteristic profile, and no clear and consistent means of identifying these individuals for empirical investigations. Raphael-Leff (2009) stated that women of this orientation experience internal conflict between the desire to give into the experience of pregnancy and the infant on the one hand, and the need to guard their highly valued independence on the other hand. Consequently, the Conflicted orientation can be viewed as a maladaptive stance.

The AMOM-R and the PPQ subscales may hold the key to future research on the Conflicted profile. Both these measures assess the Facilitator and Regulator orientation independently, providing the opportunity to easily identify those with high scores on both scales. Van Bussel (2009) has conducted some preliminary investigations of this nature using the PPQ subscales to detect categories of orientation (i.e., Facilitator, Regulator, Reciprocator, Conflicted). His findings suggested that relatively few women who held a Conflicted position in the second trimester of pregnancy continued to do so in the third trimester. Further research is needed to determine whether this category reflects a transient state of indecisiveness or the potential for psychopathology, perhaps in the context of a clinical sample. A categorical approach, similarly, could further delineate the profile associated with the Reciprocator orientation.

In relation to the Facilitator orientation, there was no evidence for an increased risk of adjustment problems. Indeed, the Facilitator approach is characterised by sensitive and responsive parenting and has been found the most likely to produce a secure infant (Scher, 2001). However, the research design did not allow for discrimination between a moderate Facilitator orientation and a more extreme Facilitator standpoint. It is conceivable that an extreme Facilitator position characterised by idealisation in the mothering role, a caregiving approach that relies on continual contact and no option for shared care or respite, could increase the risk of exhaustion and depression in the mother. Furthermore, an extreme Facilitator approach may contribute to the development of an insecure-ambivalent attachment with the infant (Cassidy et al., 2011) along with inadequate support of the child's autonomy and developing self-regulation (Raphael-Leff, 1995).

Conversely, the results from this thesis suggested some increased risk in adjustment to early motherhood with a more Regulator orientation. It is important to note, however, that a Regulator orientation does not presuppose serious lapses of protectiveness toward infants and these results reflect individual differences in a community sample rather than a clinical sample. Although there were fewer participants who endorsed a Regulator orientation, more extreme tendencies toward a Regulator orientation were associated with insecure attachment styles in the mother (both discomfort with closeness and anxiety over relationships) and more rigidity in parenting beliefs. Postpartum, a more extreme Regulator orientation was associated with a higher incidence of depressive symptoms, and less positive feelings of attachment toward the infant. It is conceivable that the Regulator position may be associated with greater likelihood of developing an avoidant attachment relationship with the infant, characterised by more intrusive maternal behaviour and less responsiveness to

infant distress cues (Ainsworth et al., 1978). Future research is needed to further explore overlaps between maternal orientation and the developing mother-child attachment relationship.

**Implications for Community and Clinical Populations**

Maternal orientation theory is largely based on the premise that women mother in different ways. An appreciation of these individual differences is important for health professionals working in the area of perinatal care (Ekström et al., 2005). It is necessary to acknowledge that attitudes toward infant care may be at odds between a health professional and the woman he/she cares for. Respect for different approaches is recommended (Matthey & Črnčec, 2012), while educating the mother on infant capabilities and the benefits of attuned caregiving may be necessary in the more concerning cases of rigidity toward mothering (such as the extreme Regulator approach). Discussion of different philosophies of infant care would also be a valuable addition to antenatal education classes to encourage forethought and self-reflection about caregiving and representations of infants. Certainly, Raphael-Leff (1982) argued that prenatal preparation is heavily geared toward the physical preparation for labour and birthing with little attention to the psychological aspects of the transition to mothering and the journey ahead.

Maternal orientation is also relevant for prevention and treatment programs related to perinatal mental health disorders. Prenatal screening programs aimed at identifying those at risk of poor adjustment postpartum are becoming more prevalent in Australia and abroad (Austin et al., 2010; Milgrom, Mendelsohn, & Gemmill, 2011; The Marce Society, 2013). Increasing clinician awareness of a woman's orientation to motherhood would help the development of rapport in the therapeutic relationship, the prediction of specific

vulnerabilities for her successful transition to motherhood, the provision of appropriate targeted social support, and help to define the goals of treatment. A mother's own unique characteristics or the deeper underlying aspects of her psyche can stipulate the type of mothering possible, and determine what types of social support would be most appropriate to enhance functioning in the mothering role.

Postnatal treatment programs that take into account individual differences in mothers' mental representations could be particularly relevant. Ultimately the goal is for the mother to feel competent, connected with her infant, and in control of how she mothers. Raphael-Leff (2009) argued that the Facilitator could be overly protective which can hinder infant development of self-regulation, whereas the Regulator can enforce independence prematurely. Women with a more Facilitator orientation may need guidance regarding how best to support their infant's exploration and autonomy, whereas for those with a more Regulator stance, programs to improve attunement and sensitive responding to infant distress might be warranted. The Circle of Security intervention (COS; Powell, Cooper, Hoffman and Marvin, 2009) presented as both a short (eight weeks) educational intervention or a longer (20 weeks) clinical intervention designed to support parents in achieving the appropriate balance of sensitive responding to infant needs and support of exploration, may be helpful for those struggling with more extreme commitment to one position or the other.

# Conclusions

This thesis provides new empirical evidence for the maternal orientation construct and confirms a modified version of the Antenatal Maternal Orientation Measure (Sharp & Bramwell, 2004) as the preferred measure to support future investigations in the field. However, further improvements to all measures are warranted and suggestions are discussed.

Inferences can also be made with regard to the Facilitator and Regulator profiles. Across all studies, a more Facilitator orientation was endorsed most often both in pregnancy and postpartum, independent of the maternal orientation measure used. Taken together the study findings suggest that a Facilitator orientation may be the most adaptive stance for motherhood, consistent with psychoanalytic theories focusing on the importance of psychological preparedness for mothering. Furthermore, the Facilitator approach to caregiving is most akin to that described by Bowlby (1969, 1973, 1980), as optimal for infant development. A previous study has suggested a Facilitator orientation is more likely than a Regulator orientation to produce a securely attached infant (Scher, 2001). However several caveats regarding these conclusions need to be acknowledged.

According to Raphael-Leff (1983), the extreme Facilitator orientation may be qualitatively different, characterised by extreme idealisation, reliance on a continuous maternal-infant union and unwavering maternal devotion. A caregiving approach such as this does not make allowances for maternal ambivalence, a natural response to the relentlessness of around-the-clock caregiving. Physical and psychological exhaustion could result from no respite and failing to meet unrealistic expectations of perfect mothering. Furthermore, an extreme Facilitator caregiving approach may not provide the opportunity for

age-appropriate infant exploration, autonomy or the development of infant self-regulation.

In relation to the Regulator profile, a more Regulator orientation was associated with insecure-avoidant and anxious adult attachment styles, more rigidity in parenting beliefs and carried a higher risk for maternal depression and mother-infant attachment-related issues. Findings support the conclusion that if a mother has strong negative feelings toward her baby *in utero* and about becoming a mother, she is at higher risk of poor adjustment to mothering in the postpartum period. However, a Regulator orientation may not always be associated with defenses around mothering. Despite the common physical and emotional needs of infants, contemporary Australian mothers were found to use a range of caregiving practices mirroring those detailed within Raphael-Leff's spectrum of Facilitator and Regulator orientations. A structured approach may work well for certain mother-infant pairs, and this study found that many first-time mothers were particularly attracted to a structured daily routine for infant feeding and sleeps.

Women may be best supported to mother the way they would like to, with tailored services to enhance feelings of competence and coping, whilst at the same time encouraging more flexible and adaptive positions within their chosen philosophies of babycare.

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# APPENDICES

Appendix A *Comparison of Published Empirical Studies that have Operationalised the Concept of Maternal Orientation.**

| Author & Title | Research questions | Participants | Measures | Results | Conclusions |
|---|---|---|---|---|---|
| Scher & Blumberg (1992)<br><br>Facilitators and Regulators: Cross-cultural and methodological considerations | Is the 3-item FRQ a reliable measure?<br><br>Is it a useful tool to classify maternal orientation in a sample of Israeli mothers? | 97 mothers (primiparous and multiparous) mothers<br><br>21-40 years old, full term healthy neonates >2.5kg | Used only two of the three FRQ items (daily routine and feeding schedule) to classify into maternal orientation groups at 6 months postpartum. | Found evidence for both a Facilitator and Regulator profile in this sample, and suggested division of middle scorers into Reciprocator orientation and a "Bipolar" group (later terms Conflicted). | Confirmed that the 3-item FRQ has very low reliability $\alpha$ = .21.<br><br>Identified a Bipolar group (later terms conflicted individuals) |
| Scher & Blumberg (1999)<br><br>Night waking among 1-year olds: A study of maternal separation anxiety | What is the relationship between maternal orientation, mothers' separation anxiety, and infant sleep? | 81 mother-child pairs from the above sample | Two of the three FRQ items were used to classify maternal orientation (see above) at 6 months postpartum.<br><br>Strange situation procedure was conducted at 12 months of age<br><br>Used the Emotional Status Index (ESI) to classify maternal separation anxiety<br><br>Used the sleep questionnaire (SQ) to quantify settling routines, night waking, parental handling and comforting procedures. | High maternal separation anxiety (MSA) was related to more infant night waking. Facilitators were more likely to "interfere" with self-soothing, e.g., offered a pacifier.<br><br>Regulators were more likely to be mothers of firstborns.<br><br>Those with more education were more likely to experience maternal separation anxiety.<br><br>Both Facilitators and Regulators experienced high separation anxiety, Reciprocators less. | Used only two of three FRQ items.<br><br>Classified maternal orientation in the postnatal period only.<br><br>Regulators were unexpectedly high in maternal separation anxiety. |

*This table excludes Raphael-Leff's seminal papers (1983, 1985a and 1985b) from which the maternal orientation construct originated.

Appendix A *Comparison of Published Empirical Studies that have Operationalised the Concept of Maternal Orientation cont'*

| Author & Title | Research questions | Participants | Measures | Results | Conclusions |
|---|---|---|---|---|---|
| Scher (2001)<br><br>Facilitators and Regulators: Maternal orientation as an antecedent of attachment security | Can maternal orientation serve as a predictor of mother-infant attachment? | 79 mother-child pairs from the above sample | All three item Facilitator Regulator Questionnaire (FRQ) were used to classify maternal orientation at 6 months postpartum<br><br>Strange situation procedure was conducted when the infant was 12 months of age<br><br>Infant characteristics questionnaire (ICQ) was used to quantify infant fussiness at 9 months of age | 34% Facilitators, 34% Regulators, 32 mixed maternal orientation.<br><br>77% secure, 23% ambivalent<br><br>92% of Facilitator mothers' infants were securely attached v's 55% of Regulator mothers.<br><br>Degree of fussiness was not related to attachment nor maternal orientation. | Used the FRQ 3 item scale with low reliability.<br><br>Offers preliminary evidence for a link between maternal orientation and mother-infant attachment. |
| Sharp & Bramwell (2004)<br><br>Empirical evaluation of a psychoanalytic theory of mothering orientations implications for the antenatal prediction of postnatal depression | Do expectations of childbirth, future baby and early motherhood vary in line with Raphael-Leff's theory of mothering orientation?<br><br>Does a Regulator orientation lead to a greater risk of postnatal depression? | 205 Primiparous women | Antenatal Maternal Orientation Measure (AMOM) administered in the third trimester<br><br>General Health questionnaire (GHQ) in the third trimester<br><br>Edinburgh Postnatal Depression Scale (EPDS) (6-8 weeks postpartum) | Found a 3-cluster solution in line with a Facilitator, Regulator, and Reciprocator distinction.<br><br>Regulators were found to be at increased risk of postnatal depression.<br><br>This finding remained even after antenatal depression symptoms were taken into account. | The AMOM has paired Facilitator and Regulator items. This format does not allow these orientations to be assessed independently. |

Appendix A *Comparison of Published Empirical Studies that have Operationalised the Concept of Maternal Orientation cont'*

| Author & Title | Research questions | Participants | Measures | Results | Conclusions |
|---|---|---|---|---|---|
| Ekström, Matthiesen, Widström, & Nissen (2005)<br>Breastfeeding attitudes among counselling health professionals | Can maternal orientation be used to classify differences in breastfeeding attitudes among professionals? | 168 midwives and nurses trained in breastfeeding counseling | Used a measure devised for the purposes of the current study, assessing breastfeeding attitudes of health professionals<br>Visual analogue scales (VAS) measures interest in breastfeeding | Showed the split in attitude for health professionals is like that of mothers. Identified 4 factors: Regulator, Facilitator, Disempowering and Breastfeeding antipathy.<br>Midwives higher on Facilitator and lower on breastfeeding antipathy and Regulator than postnatal nurses. Breastfeeding interest was positively correlated with the Facilitating factor. | Related to health professionals only.<br>Offers further questionnaire items linked with the Facilitator/ Regulator distinction. |
| Van Bussel, Spitz & Demyttenaere (2009a)<br>Depressive symptomatology in pregnant and postpartum women. An exploratory study of the role of antenatal maternal orientation | What is the influence of antenatal maternal orientation on pre and postnatal depressive symptoms?<br>What is the predictive value of maternal orientation compared with other individual differences variables known for their association with depression? | 403 pregnant primiparous and multiparous women (IVF included) above the age of 18;<br>202 with complete data sets<br>T1 (8-15 wks gest)<br>T2 (20-26 wks gest)<br>T3 (30-36 wks gest)<br>T4 (8-12 wks post)<br>T5 (20-25 wks post) | Hospital Depression Subscale (HADS-D) (T1-5)<br>Edinburgh Postnatal Depression Scale (EPDS) (T1-5)<br>Placental Paradigm Questionnaire (10 items) (T3)<br>Parental Bonding Inventory (PBI) (T1)<br>Relationship Questionnaire (RQ) (T1)<br>NEO FFI – 5 factor short scale (T2)<br>Utrecht Coping List (UCL) (T2) | Neuroticism and a Regulator orientation was positively associated with EPDS and HADS-D in pregnancy and postnatally.<br>These postnatal associations decreased in strength when antenatal depression was taken into account.<br>Antenatal maternal orientation explained a small but unique contribution to variance of depression symptoms in pregnancy and postpartum. | Maternal orientation was measured by the 10 item PPQ subscales at T3 – late pregnancy.<br>Gives information on reliability and validity of the PPQ subscales and in relation to depressive symptoms. |

Appendix A *Comparison of Published Empirical Studies that have Operationalised the Concept of Maternal Orientation cont'*

| Author & Title | Research questions | Participants | Measures | Results | Conclusions |
|---|---|---|---|---|---|
| Van Bussel, Spitz & Demyttenaere (2009b)<br>Anxiety in pregnant and postpartum women. An exploratory study of the role of maternal orientations | Does maternal orientation predict general anxiety and specific antenatal and postnatal anxiety?<br>What is the predictive value of maternal orientation compared with other individual difference variables? | Same 202/403 participants as the above study (2009a)<br>T1 (8-15 wks gest)<br>T2 (20-26 wks gest)<br>T3 (30-36 wks gest)<br>T4 (8-12 wks post)<br>T5 (20-25 wks post) | Hospital Anxiety subscale (HADS-A) (T1-5)<br>Pregnancy Related Anxiety Questionnaire (PRAQ) (T1-3)<br>Placental Paradigm Questionnaire (PPQ subscales) 10 items (T3)<br>Parental Bonding Inventory (PBI) (T1)<br>Relationship Questionnaire (RQ) (T1)<br>NEO FFI – 5 factor short scale (T2)<br>Utrecht Coping List (UCL) (T2)<br>Maternal Separation Anxiety Scale (MSAS) (T5) | High neuroticism and high Regulator scores predicted higher scores on general and pregnancy related anxiety.<br>Results were specific to maternal orientation. Regulator orientation was associated with pregnancy related anxiety, whereas Facilitator orientation was associated with maternal separation anxiety. | As above, and explains the relationship between maternal orientation and anxiety is likely more complex than that related to depressive symptoms. |
| Van Bussel, Spitz & Demyttenaere (2010a)<br>Childbirth expectations and experiences and associations with mothers' attitudes to pregnancy, the child and motherhood | Could a woman's childbirth experiences be predicted by maternal orientation classifications in pregnancy? | 298 women (from the same sample as the preceding papers)<br>T1 (8-15 wks gest)<br>T2 (20-26 wks gest)<br>T3 (30-36 wks gest)<br>T4 (8-12 wks post)<br>T5 (20-25 wks post) | Placental Paradigm Questionnaire (PPQ subscales) 10 items (T3)<br>Salmon Item List (SIL) measuring expectations of childbirth in pregnancy and experience of childbirth postpartum.<br>Electronic patient records of childbirth information: hospital admission, delivery type, medical intervention and neonatal care. | Women tending to the Facilitator orientation expected more fulfilment and less distress in childbirth, whereas women tending to the Regulator orientation expected less fulfilment and more distress.<br>Primiparous women with Facilitator tendencies had lower feelings of fulfillment after assisted delivery compared to those with Facilitator tendencies and spontaneous delivery. | Maternal orientation was measured by the PPQ subscales at T3-late pregnancy.<br>This study offers further validation of the PPQ subscales in terms of its relevance to the perception of the birth experience. |

Appendix B

*The 5-item Facilitator Regulator Questionnaire (FRQ; Raphael-Leff, 2009)*

***These questions ask about how you manage your baby and what you believe about baby care.***

1. Do you have a daily routine for your baby? Yes No

Please specify (leave 6 lines)

When did it begin?

2. In general which do you believe (about breast or bottle) during the first 3 months: please tick one.
   a. Babies should be fed whenever and for as long as they want
   b. Babies should be allowed unrestricted sucking including night feeds but the idea of 'mealtimes' should be introduced
   c. Babies should be fed when they are clearly hungry
   d. Babies should be fed adjustable quantities at specified times but not at night
   e. Babies should be fed a set amount by schedule (3-4 hourly with no 'snacking' in between)

2a. Ideally, at what age do you think weaning should occur? _____ (baby's age)

| | | | | | |
|---|---|---|---|---|---|
| 3. When do you believe the baby starts communicating with you (please think about the baby's intentional efforts to communicate) | During pregnancy/ before birth | At birth | Within the first 2 weeks | Between 2 and 8 weeks | After 2 months |

How? _____

| | | | |
|---|---|---|---|
| 4. Which best describes your feelings during the first weeks | My baby seemed part of me | My baby seemed an outgoing sociable person | My baby seemed separate but not yet sociable |
| 5. How would you mostly describe your interaction with your baby? | I adapt myself to my baby | We negotiate between us | The baby adapts to the household routine |

Appendix B *Facilitator Regulator Questionnaire Scoring:*

Question 1: Do you have a daily routine for your baby?

| | |
|---|---|
| 0 | Extreme Facilitator No routine: nothing at all specified |
| 1 | Moderate Facilitator says YES but nothing specific itemized or says NO and very few general activities enumerated (such as play, lunch, nap) |
| 2 | Reciprocator group some set sequences |
| 3 | Moderate Regulator detailed times/activities; some flexibility |
| 4 | Extreme Regulator inflexible specification of times/activities |
| Note: | When routine was begun at 1 year plus, deduct 1 from score |

Question 2: In general which do you believe (about breast or bottle) during the first 3 months

| | |
|---|---|
| 0 | a. Babies should be fed whenever and for as long as they want |
| 1 | b. Babies should be allowed unrestricted sucking including night feeds but the idea of 'mealtimes' should be introduced |
| 2 | c. Babies should be fed when they are clearly hungry |
| 3 | d. Babies should be fed adjustable quantities at specified times but not at night |
| 4 | e. Babies should be fed a set amount by schedule (3-4 hourly with no 'snacking' in between) |

Question 2b: Ideally, at what age do you think weaning should occur?

| | |
|---|---|
| + 1 | Very early weaning |
| 0 | Average weaning |
| –1 | Very late weaning |
| Note: | [a]In a culture bound activity such as this, solid feeds and weaning times must be adjusted to suit local feeding recommendations and changing habits. |

[a]For this thesis we used less than 6 months to indicate early weaning, 6-12 months average weaning, more than 12 months to indicate late weaning

Appendix B

*5-item Facilitator Regulator Questionnaire Scoring cont'*

| Question 3: When do you believe the baby starts communicating with you | |
|---|---|
| 0 | During pregnancy/before birth |
| 1 | At birth |
| 2 | Within the first 2 weeks |
| 3 | next 6 weeks |
| 4 | after 2 months |

| Question 4: Which best describes your feelings during the first weeks | |
|---|---|
| 0 | My baby seemed part of me |
| 1 | My baby seemed an outgoing sociable person |
| 2 | My baby seemed separate but not yet sociable |

| Question 5: How would you mostly describe your interaction with your baby | |
|---|---|
| 0 | I adapt to my baby |
| 1 | We negotiate between us |
| 2 | The baby adapts to the household routine |

| Total scores: | |
|---|---|
| 0–2 | Extreme Facilitator |
| 3–5 | Moderate Facilitator |
| 6–10 | Reciprocator group |
| 11–13 | Moderate Regulator |
| 14–16 | Extreme Regulator |

*Note:* Conflicted group = People whose moderate scores are composed of a combination of high and low scores on questions 1, 2, 3 constitute a separate group.

## Appendix C

*The Antenatal Maternal Orientation Measure–Revised (AMOM-R) items*

| Regulator subscale | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree |
|---|---|---|---|---|---|---|
| 1) My baby will be like a stranger at first | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 2) My baby will be unable to tell me apart from other people early on | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 3) To begin with, I intend to feed my baby at set times | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 4) After several months, I intend to feed my baby at set times | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 5) I intend to mostly bottlefeed | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 6) I will be mostly trying to get the baby into a routine | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 7) I will be mostly feeling trapped | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 8) I will be mostly waiting for things to get back to normal | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| **Facilitator subscale** | **Strongly disagree** | **Disagree** | **Slightly disagree** | **Slightly agree** | **Agree** | **Strongly agree** |
| 9) My baby will be like someone that I already know | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 10) My baby will be able to tell who I am from early on | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 11) To begin with, I intend to feed my baby on demand | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 12) After several months, I intend to feed my baby on demand | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 13) I intend to mostly breastfeed | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 14) I will be mostly feeling fulfilled | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 15) I will be mostly enjoying the new way of life | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 16) My baby will fit easily into my life | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 17) My baby will be born being able to communicate with me | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 18) My baby will be born knowing what is best for him/her | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |

Appendix C cont' ***AMOM-R: Suggested ordering of items for future research***

We are very interested in getting a sense of the way you intend to care for your baby and your expectations of life with your baby. There are no right or wrong answers. Please just answer as honestly and as quickly as you can, not thinking for too long about any particular question.

Your expectations of life with your baby

| ***What do you imagine your <u>baby</u> will be like at first?*** | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree |
|---|---|---|---|---|---|---|
| 1. My baby will fit easily into my life | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 2. My baby will be like a stranger at first | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 3. My baby will be able to tell who I am from early on | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 4. My baby will be unable to tell me apart from other people early on | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 5. My baby will be born being able to communicate with me | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 6. My baby will be like someone that I already know | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 7. My baby will be born knowing what is best for him/her | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| ***How do you intend to feed your baby?*** | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree |
| 8. To begin with, I intend to feed my baby on demand | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 9. To begin with, I intend to feed my baby at set times | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 10. After several months, I intend to feed my baby at set times | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 11. After several months, I intend to feed my baby on demand | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 12. I intend to mostly breastfeed | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 13. I intend to mostly bottlefeed | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| ***How do you imagine <u>yourself</u> in the first few weeks?*** | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree |
| 14. I will be mostly trying to get the baby to adapt to a routine | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 15. I will be mostly feeling fulfilled | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 16. I will be mostly feeling trapped | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 17. I will be mostly enjoying the new way of life | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 18. I will be mostly waiting for things to get back to normal | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |

Appendix D

*The Placental Paradigm Questionnaire (PPQ) Facilitator and Regulator Subscales. Published within the Placental Paradigm Questionnaire (Raphael-Leff, 2009); refined by van Bussel, (2009)*

Facilitator Subscale

| | Strongly disagree | … | Disagree | … | Agree | … | Strongly Agree |
|---|---|---|---|---|---|---|---|
| 1. I feel more of a woman now that I am pregnant | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 2. Pregnancy is the peak of my female experience | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 3. Pregnancy makes me feel special | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 4. This pregnancy is perfect | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 5. I feel I have a lovely baby inside me | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |

Regulator Subscale

| | Strongly disagree | … | Disagree | … | Agree | … | Strongly Agree |
|---|---|---|---|---|---|---|---|
| 1. I experience the baby inside me as being hard to satisfy | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 2. The baby seems like an intruder or parasite | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 3. I feel as though the baby might damage me inside | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 4. I feel as though there is a battle going on inside me between what I need for myself and what the baby wants from me | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 5. I feel uneasy about sharing my body with the baby | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |

Appendix E

*Infant Feeding Schedules (IFS) and Infant Sleep Schedules (ISS)*

Infant Feeding Schedules (IFS)

| | Always | Often | Sometimes | Rarely | Never |
|---|---|---|---|---|---|
| 1. I feed my baby whenever he or she wants[b] | ( ) | ( ) | ( ) | ( ) | ( ) |
| 2. I give my baby smaller 'top up' feeds between other feeds | ( ) | ( ) | ( ) | ( ) | ( ) |
| 3. I feed my baby on a schedule (i.e., 3-4 hourly)[b] | ( ) | ( ) | ( ) | ( ) | ( ) |
| 4. I feed my baby on 'demand', without regard to any time schedules[a] | ( ) | ( ) | ( ) | ( ) | ( ) |
| 5. I try to prolong the time between feeds | ( ) | ( ) | ( ) | ( ) | ( ) |

Infant Sleep Schedules (ISS)

| | Always | Often | Sometimes | Rarely | Never |
|---|---|---|---|---|---|
| 1. I let my baby sleep whenever he or she wants[b] | ( ) | ( ) | ( ) | ( ) | ( ) |
| 2. I have set times for my baby's sleeps[b] | ( ) | ( ) | ( ) | ( ) | ( ) |
| 3. I discourage my baby from having small naps between other sleeps | ( ) | ( ) | ( ) | ( ) | ( ) |
| 4. My baby sleeps without regard to any time schedules[a] | ( ) | ( ) | ( ) | ( ) | ( ) |
| 5. My baby is permitted to sleep for as long as he or she wants | **( )** | **( )** | **( )** | **( )** | **( )** |

*Note:* Item wording adapted from [a]Ekström, Matthiesen, Widström, & Nissen, 2005 and [b]Raphael-Leff,

Appendix F

*Parental Interactive Bedtime Behaviour Scale (PIBBS) (one factor solution; modified from Morrell & Cortin-Borja, 2002).*

Which methods do you use to settle your baby off to sleep? How often do you use each one? (Please give an answer to all items).

| | Never | Rarely | Sometimes | Often | Very often |
|---|---|---|---|---|---|
| 1. Cuddling or rocking in arms | ( ) | ( ) | ( ) | ( ) | ( ) |
| 2. Carry around the house in arms (or sling) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 3. Stroke part of baby, or pat | ( ) | ( ) | ( ) | ( ) | ( ) |
| 4. Give a feed/drink | ( ) | ( ) | ( ) | ( ) | ( ) |
| 5. Singing a lullaby | ( ) | ( ) | ( ) | ( ) | ( ) |
| 6. Settle in parent bed | ( ) | ( ) | ( ) | ( ) | ( ) |
| 7. Talking softly to baby | ( ) | ( ) | ( ) | ( ) | ( ) |
| 8. Settle on sofa with parent | ( ) | ( ) | ( ) | ( ) | ( ) |
| 9. Leave to cry (*) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 10. Playing with baby | ( ) | ( ) | ( ) | ( ) | ( ) |
| 11. Lie with baby next to their cot | ( ) | ( ) | ( ) | ( ) | ( ) |

(*) item reverse coded

Pages 245-249 of this thesis have been removed as they may contain sensitive/confidential content

Pages 261-298 of this thesis have been removed as they contain published material. Please refer to the following citations for details of the article contained in these pages.

Wendy Roncolato & Catherine McMahon (2011): Facilitators and regulators: psychometric properties of maternal orientation measures in pregnancy, Journal of Reproductive and Infant Psychology, 29(5), 420-438.
DOI: https://doi.org/10.1080/02646838.2011.635421

Wendy Roncolato & Catherine McMahon (2013): Facilitators and regulators: infant sleep practices and maternal subjective well-being, Journal of Reproductive and Infant Psychology, 31(2), 134-147.
DOI: https://doi.org/10.1080/02646838.2013.766922