INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI

A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA
313/761-4700 800/521-0600

UNIVERSITY OF ALBERTA

BECOMING A MOTHER TO TWINS

BY 

JEANNE ELIZABETH VAN DER ZALM

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfilment of the requirements for the degree of MASTER OF NURSING.

FACULTY OF NURSING

Edmonton, Alberta

Spring 1994

National Library of Canada
Acquisitions and Bibliographic Services
395 Wellington Street
Ottawa ON K1A 0N4
Canada

Bibliothèque nationale du Canada
Acquisitions et services bibliographiques
395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence

Our file Notre référence

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-22053-2

Canada

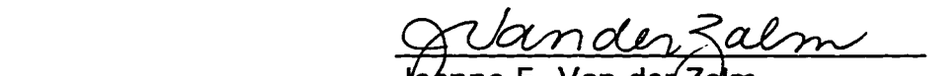
UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR:	JEANNE ELIZABETH VAN DER ZALM
TITLE OF THESIS:	BECOMING A MOTHER TO TWINS
DEGREE:	MASTER OF NURSING
YEAR THIS DEGREE GRANTED:	1994

Permission is hereby granted to the University of Alberta Library to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or scientific research purposes only.

The author reserves all other publication and other rights in association with the copyright in the thesis, and except as hereinbefore provided neither the thesis nor any substantial portion thereof may be printed or otherwise reproduced in any material form whatever without the author's prior written permission.



Jeanne E. Van der Zalm
9413 - 97 Street
Fort Saskatchewan, Alberta
T8L 1S9

April 8, 1994

UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled **BECOMING A MOTHER TO TWINS** submitted by **JEANNE VAN DER ZALM** in partial fulfillment of the requirements for the degree of **MASTER OF NURSING.**

Dr. P.A. Field

Dr. A. Anderson

Dr. B. Munro

21 March 1994
Date

When an archer is shooting for nothing he has all his skills.
If he shoots for a brass buckle, he is already nervous . . .
The prize divides him.
He cares.
He thinks more of winning than of shooting--and the need to win
Drains him of power.

Chuang Tzu

DEDICATION

To my twins - Adrianne and Heather, Carey and Jon - who first made me ask the questions.

To my dear husband Judd, who never ceases to provide encouragement and support.

To all of the women who participated in this work and who are just beginning the journey discovering the meaning of mothering twins.

Abstract

As reproductive technology advances and age patterns of childbearing change, caring for women experiencing a twin pregnancy is becoming an increasingly frequent activity for nurses. Women experiencing a twin pregnancy undergo many prenatal assessments and are often hospitalized during pregnancy. Nurses are in a unique position to provide education and support to these women in community and hospital settings. However, little is known about the woman's experience of being pregnant with twins. The purpose of this study was to identify, describe and propose a beginning theory of the relationship between a mother and her unborn twins. A qualitative grounded theory methodology was chosen for this study. Ten women pregnant with twins provided data during interviews conducted once during the last trimester of pregnancy and once at about six weeks postpartum. This data was analyzed using the constant comparative method. Two additional informants were sampled to clarify and verify the developing theory. For women in this study, the findings indicate that mothers form a relationship with their unborn twins within the larger context of accommodating the twin pregnancy into their lives, a major social process. A mother accomplishes this process by making room for two babies in her life, through seeking information and via a personal assessment of the risks associated with the pregnancy. If a mother perceives the risk associated with the pregnancy to be high, she engages in self protective

behaviours and behaviours designed to protect the health of her unborn twins. As the pregnancy progresses, feelings of fear and worry about the outcome of the pregnancy decrease and a mother moves toward the reality of a twin pregnancy.

Acknowledgements

I would like to express my deepest appreciation to the many individuals who assisted me with this research. Many thanks to Dr. Nestor Demianczuk, Dr. Nan Okun, Dr. Keith Still and Dr. Terry Unger for their interest in multiple pregnancies and their support of this project. I would also like to thank the Edmonton Twin and Triplet Club executive for supporting this research and allowing me access to their monthly publication.

Much gratitude and thanks to the members of my thesis committee, Dr. Brenda Munro, who supported my interest and stimulated my thinking processes and Dr. Arnette Anderson, who was always available to discuss this project and provide feedback and support. My thesis supervisor, Dr. Peggy Anne Field, has been invaluable in guiding me throughout this program. Her belief in my abilities, her provision of encouragement and support through all phases of this research process and, perhaps most of all, encouragement of my independence has made this research project a pleasure to conduct and complete.

Several of my colleagues were of great assistance to me during this program. I would like to thank Gloria Bauer for her support and encouragement throughout this project. Maureen McQueen's listening ear and thoughtful consideration of my endless questions during this program truly epitomized collegial support. Many thanks to Trudy Jaskela for her continual personal and professional support and for being a weekend surrogate mother to my children while I completed the requirements for my

courses.

I would like to thank Ellie Hallman and Margaret Scherger for their formatting expertise. Also special thanks to Kay, Karen, Jocelyn and Donna whose expertise and assistance in the library made this project so much simpler for me.

Finally, I would like to acknowledge the Alberta Association of Registered Nurses and the Canadian Nurses Foundation for their financial support of this research study.

Table of Contents

List of Tables

List of Figures

CHAPTER I

INTRODUCTION

The incidence of multiple births, associated with changing age patterns of childbearing and advancing reproductive technologies, has progressed steadily upward since the early 1980s (Miller, Wahera, & Nimrod, 1992). In Canada, the most commonly occurring category of multiple births is twins. In 1990, 4107 sets of twins were recorded nation-wide, an increase of 23% over those recorded in 1981 (Miller, Wahera, & Nimrod, 1992). As a result of these trends, caring for women experiencing a multiple pregnancy has become an increasingly frequent activity for nurses in both hospital and community settings.

To date, much of the theoretical and research literature related to pregnancy has focused upon a woman's experience of being pregnant with a single infant. Authors of theoretical literature have elaborated upon the developmental progress of a woman through pregnancy describing a series of maternal tasks to be mastered prior to the birth of the infant (Rubin, 1975). Writers have suggested that the manner in which a prospective mother meets the developmental tasks of pregnancy will have an impact upon her post-partum adjustment and her later involvement with her infant (Leifer, 1977; Tilden, 1980; Valentine, 1982).

One developmental task believed to be central to a woman's pregnancy experience is the process of attaching to her infant in both the pre and postbirth periods (Cranley, 1981a; Leifer, 1977; Rubin 1975, 1977). Although writers suggest that mothers encountering a twin pregnancy experience a distinctly different attachment process than do mothers pregnant with a single child (Gromada, 1981; Leonard, 1981; Showers & McCleery, 1984), no theoretical literature has been found addressing the similarity or differences in developmental tasks for such women.

Three research studies were found in which a mother's relationship with her unborn infant, conducted from the perspective of the mothers themselves, is described. The findings from the first, a qualitative study of 30 primigravidas indicated that by mid-pregnancy these mothers had, and could realistically describe, an image of the fetus (Lumley, 1980, 1982). The findings from the second, a qualitative study of 24 low-risk expectant couples, indicated that both prospective mothers and fathers sensed the unborn infant as a unique person (Stainton, 1985b, 1990). The findings of the third, a longitudinal study of five women with varying high risk conditions, resulted in the identification of a process wherein a mother's self-protection affected her developing relationship with the fetus (McGeary, 1991). In only this last study did the researcher include in the sample one mother expecting twins. The findings, however, did not differentiate

between her experience and the experience of the other high risk mothers who were expecting a single child.

Although attaching to an infant has been identified as a multidimensional process occurring throughout pregnancy (Bergum, 1989; Rubin, 1975; Tilden, 1980; Valentine, 1982), quantitative measurements of attachment at a single point in time have frequently been used as an indication of the prebirth mother-infant relationship. Conflicting and inconclusive results about the nature of prebirth attachment, possibly due to the inadequacy of a single measurement in time to capture the essence of a process, are reported in a review of 19 quantitative studies (Muller, 1992). Of the many variables investigated, only two--quickening and gestational age--have had consistently positive correlations with prenatal attachment measures across several studies (Grace, 1984; Heidrich & Cranley, 1989; Lerum & LoBiondo-Wood, 1989; Muller, 1992; Reading, Cox, Sledmere, & Campbell, 1984). None of the samples in these studies included mothers experiencing a twin pregnancy.

Although some researchers have investigated the postbirth mother-twin relationship (Anderson & Anderson, 1987, 1990; Frazer, 1977), no research has been found which addresses the antenatal mother-twin relationship. The influence of multiple pregnancy on the developing mother-infant prebirth relationship also does not appear to have been investigated. A qualitative study, exploring the process and reality of developing a

relationship with unborn twins, would be of value in order to gain an understanding of this phenomena from the perspective of the pregnant woman.

Statement of Purpose

In response to the lack of information in the literature relating to twins in the antenatal period, the purpose in this research was to identify, describe and propose a beginning theory of the relationship between a mother and her unborn twins.

Research Questions

The following questions were used to guide this research:

1. How does a pregnant woman describe her experience in developing a relationship with her unborn twins?
2. How does the presence of twin fetuses influence the developing prebirth relationship?

a) How does the pregnant woman acknowledge the presence of twins as part of her pregnancy experience?

b) Does the pregnant woman have a relationship with her unborn twins individually or as a unit?

3. Does a mother experiencing a twin pregnancy perceive herself to be high-risk?

Definition of terms:

1. high-risk pregnancy: a pregnancy which involves an above-average risk of death or disability to the mother, or fetus, or both, when compared to a pregnancy without complications.
2. fetus: a developing infant who is presently in utero and not yet born.
3. twin pregnancy: a pregnancy with two fetuses.
4. quickening: the first sensing of fetal movement by a pregnant woman.
5. zygosity: referring to the type of twins, identical or fraternal.
6. primigravida: a woman who is pregnant with her first child.
7. multipara: a woman who has borne at least one viable infant.
8. gender: male or female.
9. viable: capable of developing, growing, and otherwise sustaining life.
10. edema: accumulation of fluid in body tissues.
11. trimester: 3 months, or one-third of the pregnancy.
12. gestational age: the number of complete weeks of fetal development.
13. nulliparous: a woman who has never borne an infant.

Significance of the Study

Mothers experiencing a twin pregnancy undergo many prenatal assessments and are often hospitalized during pregnancy. Nurses are in a unique position to provide education and support to these women. To accomplish this, nurses require an understanding of the unique experience of a mother relating to two unborn children. It was hoped that the results of

this research would facilitate improved nursing care to those women and their families who experience multiple births.

Because there is little research in the area of mother-twin attachment and no research in the area of prebirth relationships during a multiple pregnancy, the results of this study also will serve to enlarge the existing body of knowledge about the process of maternal-infant attachment. The results of exploratory research such as this may generate additional questions and propose theoretical relationships that will provide a foundation for further research specific to this area.

CHAPTER II

LITERATURE REVIEW

The purpose in this literature review is to examine, summarize and critically assess existing literature related to the mother-infant relationship. This review of research and descriptive literature from nursing, medicine and the behavioral sciences has incorporated both computer and manual searches. MEDLINE, PSYCHLIT and CINAHL computer searches were done for the time period from 1982 to April, 1993. A manual search of the Cumulative Index to Nursing and Allied Health Literature was completed from 1975 to 1982. Terms searched were: twins, multiple pregnancy, multiple gestation, connecting, connection, attaching, attachment, attachment behavior, bonding, mother-child relations, mother-infant relations and parent-child relations. These terms were searched in relation to the antepartum, intrapartum and postpartum periods of pregnancy, as well as childhood. Literature dated earlier than 1975 was included if considered classic and pertinent to this research.

In this chapter, theoretical views concerning the nature of the mother-infant relationship will be summarized and compared. Following this discussion, literature concerning the relationship between a mother and a single infant as well as a mother and twin infants in both the neonatal and prebirth periods will be presented and analyzed.

The Mother-Infant Relationship

The Postbirth Relationship

In the past three decades, much debate has occurred concerning the nature of the relationship between a mother and her infant. Many researchers and authors have concentrated their efforts on describing and quantifying the mother-infant tie in the postbirth period with the premise that a positive maternal-infant relationship facilitates positive social and emotional development in later life (Barnard, Hammond, Booth, Bee, Mitchell, & Spieker, 1989; Bowlby, 1958; Brazelton, Kozlowski, & Main, 1974; Klaus & Kennell, 1976).

John Bowlby's (1958, 1969, 1977) theories about a mother-infant tie merged traditional psychoanalytic thinking related to instinctual drive with modern biological advances. He formed an ethological-evolutionary approach to viewing the mother-infant relationship which he refers to as *attachment*. This approach proposes that attachment occurs when an inbuilt biological system is activated in the infant resulting in 5 instinctual responses (sucking, clinging, crying, smiling and following of eyes) which form the basis of attachment behavior. Attachment behaviors in infants release instinctual care-giving responses in mothers, promoting proximity of the mother to the infant and thereby survival of the species. To Bowlby, attachment occurs in 4 sequential stages from birth until the third year and is a tie between mother and infant existing independent of time and space.

The time period in which attachment occurs has been disputed by other researchers, notably Klaus and Kennell (1976, 1982). These researchers used Bowlby's concept of attachment with observations of a wide range of animal species to propose a theory of mother-infant bonding in the neonatal period. They suggested the existence of a *critical* or *sensitive* period in the first minutes and hours following an infant's birth in which *bonding* between mother and infant can occur to an optimum degree. Noting that an infant's difficulty in thriving and subsequent maternal abuse was often associated with mother-infant separation soon after birth, these researchers concluded that early and close contact between a mother and her infant were necessary for the infant's optimal development (Klaus & Kennell, 1976). In addition, they proposed that the process of bonding is structured so the mother becomes optimally attached to only one infant at a time. Klaus and Kennell (1976) termed this the theory of monotrophy.

The critical period bonding theory has been criticised by many researchers. Issues of non-replication (Campbell & Taylor, 1979; Lamb & Hwang, 1982), inability of the researchers to specify the exact timing and duration of the critical period (Chess & Thomas, 1982; Tulman, 1981) or even differentiate the meaning of critical period versus sensitive period (Watkins, 1987), confusion regarding multiple variables being assessed during critical period research (Campbell & Taylor, 1979; Elliott, 1983; Goldberg, 1983; Lamb, 1982) and the generalizations made from animal to

human studies (Lamb & Hwang, 1982; Nelson, 1985; Watson, 1991) have affected the viability of Klaus & Kennell's conclusions. To date, no clear evidence exists to support the notion that early mother-infant contact is necessary to ensure the infant's optimum development (Goldberg, 1983; Herbert, Sluckin, & Sluckin, 1982; Lamb, 1982; Morgan, 1981; Myers, 1984; Svejda, Pannabecker, & Emde, 1982).

In response to such criticisms, Kennell and Klaus (1984) have defended their research and attempted to clarify some of their early conclusions, urging researchers to consider the bonding process as one involving varied and complex factors that cannot be considered in isolation. Support for their views are found in a recent study by Pascoe and French (1989). These researchers found that a number of demographic, biological and environmental factors were associated with the development of positive feelings in mothers toward their infants, such as level of education, fetal movement during pregnancy, fatigue after delivery, as well as support of a partner.

Although widely criticized, the critical period hypothesis proposed by Klaus and Kennell (1976, 1982) has facilitated important positive advances in human birth practices. Hospitals have humanized the obstetrical experience, providing options for parents to be with their infants in the immediate postpartum period. In addition, the work of Klaus and Kennell

(1976, 1982) has emphasized the parental side of the developing relationship between parent and infant.

Negative aspects of this approach also exist. For instance, "bonding" has become a popular by-word and it is thought to be a critical element for a mother-infant relationship in an all-or-none fashion. Parents lacking the opportunity or the desire for early contact may feel compromised in relation to their obstetrical experience. Feelings of guilt, anxiety or disappointment may ensue and the dynamic, developing relationship between parent and infant may be affected because parents feel they lacked the opportunity to "bond" in the early postpartum period. Because this model emphasizes the role of maternal newborn contact in establishing attachment, the possibility of a mother neglecting maternal-child interaction later in infancy and childhood may exist (Goldberg, 1983; Myers, 1984).

It cannot be disputed that early mother-infant contact may be beneficial to some mothers in some situations, but not necessarily to all mothers irrespective of individual circumstances (Nelson, 1985). The notion that early contact is a precondition of mother-infant attachment fails to account for satisfactory attachments between mothers with adoptive children and with preterm infants, separated from their mothers at birth, whose psychosocial development has progressed in a satisfactory manner (Herbert et al., 1982; Myers, 1984; Svjeda et al., 1982).

In spite of the debate regarding theoretical aspects of the mother-infant relationship, each of the three developmental approaches to the concept of attachment has contributed to a greater understanding of the mother-infant relationship by providing alternative directions for researchers interested in studying attachment. Popular with developmentalists, nurses and physicians, Bowlby's (1958, 1969, 1977) combination of psychoanalytic and evolutionary approaches has appeal for those who cannot deny an inner, biological structure to the human organism. However, criticism of Bowlby's approach to attachment has focused on the lack of information about attachment after the early childhood stage and Bowlby's extrapolation of animal observations to the human species (Bretherton, 1985). In addition, questions have arisen concerning attachment differences and their relationship to cultural variations, family and social groups. Indeed, it is suggested that researchers begin to go beyond Bowlby's theory, incorporate these areas of individual difference and view attachment from a life course or life transition perspective (Grossman & Grossman, 1990; Myers, 1984).

Defining the Mother-Infant Relationship

A variety of terms have been used to describe the relationship that develops between a mother and her child. Klaus and Kennell (1976) used the terms bonding and attachment interchangeably. Other authors have defined bonding as the tie which develops from parent to infant shortly after birth

(Campbell & Taylor, 1979), while attachment has been defined as the long term, bidirectional relationship between a mother and her child that develops gradually over the first year of life (Ainsworth, 1969; Ainsworth & Bell 1970; Bowlby, 1958; Campbell & Taylor, 1979). In this research study, no attempt has been made to confine the literature review to a particular definition of the mother-infant relationship. Rather, any pertinent literature which reported maternal-fetal attachment and maternal-infant attachment is included in this review.

Studying the Mother-Infant Relationship

Three approaches to the study of the mother-infant relationship have emerged from the literature. The first approach has focused on studying infant behaviors which have the effect of eliciting maternal care-taking behaviors (Ainsworth, 1973; Ainsworth & Bell, 1970). The second approach focuses on the presence or absence of specific observable maternal behaviors which are considered indicators of a mother-infant relationship (Avant, 1979; Funke & Irby, 1978; Reiser, 1981; Rhone, 1980). The third approach focuses on behaviors describing a mutual, rhythmic, reciprocal, interactive process between mother and child where the interdependency of rhythms between the mother-child dyad are the root of attachment (Barnard et al., 1989; Brazelton & Cramer, 1990; Brazelton et al., 1974).

Although the origins of attachment have been acknowledged to exist in the prebirth period (Cranley, 1981b; Davis & Akridge, 1987; Leifer, 1977),

the study of attachment has been concentrated in the postbirth period. The three approaches mentioned above focus on the objective empirical measurement of behaviors, quantifying each observation as a positive or negative indicator of a relationship but lacking an adequate explanation about the process a mother experiences when developing a relationship with her child. In addition, these approaches focus only on the postbirth mother-infant relationship. If birth is recognized as the beginning of the relationship between a mother and her infant, then neither the presence nor sensing of the child as an individual in utero is recognized as part of the experience of attaching (McGeary, 1991; Stainton, 1985a).

Enhancing the Postbirth Mother-Infant Relationship

Under the premise that prebirth attachment exists and influences postbirth attachment, research has been done to determine if prebirth interventions enhance postbirth attachment. The findings, however, are inconclusive.

Four studies have been found which investigate the effect of various prenatal interventions such as Lamaze education, knowledge of fetal gender, fetal position, fetal activity and abdominal massage on postbirth attachment (Carson & Virden, 1984; Carter-Jessop, 1981; Croft, 1982; Grace, 1984). Only Carter-Jessop (1981) reported significant findings, which indicated that the maternal attachment process can be enhanced by administering an attachment intervention (feeling for fetal position, noting fetal activity and

massaging the abdomen) on a daily basis during the third trimester of pregnancy. Limitations of this particular study, such as small sample size, post test only design, undetermined reliability and validity of the study's instruments and homogeneity of subjects affected the generalizability of the results (Gaffney, 1988).

Using a research design intended to correct some of these threats to reliability and validity (e.g. inclusion of low income, multi-ethnic, mixed parity sample of 69 women and using both pre and post test measurements), Carson and Virden (1984) reported no significant relationships between prenatal intervention and maternal postpartum behavior when Carter-Jessop's attachment intervention (i.e. feeling for fetal parts, increasing awareness of fetal activity, daily massage of abdomen), was used. Davis and Akridge (1987) undertook a modified replication of the Carter-Jessop study using a larger sample and multiple measurements on both the Cranley Maternal-Fetal Attachment Scale (1981a) and Avant (1982) maternal attachment assessment scale. These researchers reported inconclusive findings. They did, however, claim evidence that maternal-fetal attachment behaviors were observed during the third trimester using Cranley's measurement tool, a finding in accord with a previous study (Cranley, 1981b).

In conclusion, there is no consistent evidence to suggest that prenatal attachment interventions enhance postbirth attachment. An understanding of

individual differences in the mother-fetal relationship and the process of prebirth attachment is necessary before further investigation of prenatal interventions on postbirth attachment is conducted (Gaffney, 1988). Qualitative investigation into prebirth attachment would provide the rich data from which hypotheses concerning the enhancement of postbirth attachment from the prebirth period may be made.

The Prebirth Relationship

Developmental Process

Authors of developmental literature suggest that the relationship between a mother and her infant is the result of a gradual developmental process which begins during pregnancy (Bergum, 1989; Lederman, 1984; Rubin, 1975; Stainton, 1985a, 1986; Trad, 1991; Valentine, 1982; Williams, Joy, Travis, Gotowiec, Steele, Aiken, Painter, & Davidson, 1987). Others believe that the developmental conflicts accompanying pregnancy are severe enough that the course of pregnancy can be viewed as a maturational crisis for the mother (Bibring, Dwyer, Huntington, & Valenstein, 1961; Campbell & Field, 1989; Tilden, 1980). All of the authors reviewed agree that the pregnant woman experiences not only physical changes and physiological adaptations to accommodate the fetus but also undergoes a period of reordering her own identity and interpersonal relationships.

Developmentalists describe four maternal tasks of pregnancy, one of which is the development of an emotional affiliation with the unborn child

(Coleman & Coleman, 1973/74; Rubin, 1975; Tilden, 1980). The manner in which these tasks are mastered is thought to be predictive of mothers' subsequent success in mastering later tasks as well as their adult and parental roles (Valentine, 1982).

Two studies, both longitudinal in design, have been found that relate to the developmental processes occurring during pregnancy (Leifer, 1977; Williams et al., 1987). The first study, conducted by Leifer, investigated the psychological changes accompanying motherhood in 19 primiparous mothers. The researcher utilized a repeated measures design which incorporated seven interviews and 12 quantitative measures during pregnancy and the first seven months postpartum. She found the most significant developmental task of pregnancy was "the acceptance and emotional incorporation of the fetus" (p. 91), noting that a mother's emotional attachment to the fetus developed in a sequential manner and was increasingly evident following quickening. This study is much quoted in the literature relating to maternal-fetal attachment. Including both qualitative and quantitative data collection techniques and multiple measures enhance the validity of Leifer's findings, although the sample is somewhat homogeneous (i.e. white, middle class primigravidas, age range 23-33 years), and therefore the generalizability of findings may be limited.

The second study investigates a woman's transition to motherhood (Williams et al., 1987). These researchers report the findings of a

quantitative analysis of data obtained during the eighth month of pregnancy and on two occasions postpartum from various subsets of a group of 238 primiparous women. Preliminary findings indicate that feelings of maternal attachment are related to a number of measures of a mother's psychological well-being, notably parenting confidence. Although these researchers acknowledge the processes involved in a mother developing a relationship with her child, their data is collected at only one point during pregnancy and on two occasions postbirth (at one month and two years of age). In addition, the use of only quantitative measures may exclude the presentation of some data such as data from the woman's perspective.

In conclusion, the theoretical and research literature reviewed suggests that the mother-child relationship begins during pregnancy. In addition, the development of this relationship is one of the maternal tasks of pregnancy. Because the research reviewed originates in industrialized countries, a question remains regarding the existence of a universal pregnancy developmental process unaffected by cultural variations and differing belief systems.

Quantitative Research

Measurement of Prebirth Attachment.

In the past 15 years, efforts have been made by researchers to quantitatively measure the prebirth relationship under the premise that prebirth attachment could then be systematically studied in relation to other variables. Two researchers have

developed instruments to measure maternal-fetal attachment during pregnancy.

The first researcher, Cranley (1981a), developed the Maternal-Fetal Attachment Scale (MFAS) to measure the "extent to which women engage in behaviors that represent an affiliation and interaction with their unborn child" (p. 282). She initially identified six aspects of the mother-fetal relationship which were incorporated as subscales for the instrument. The subscales were differentiation of self from the fetus, interaction with the fetus, attributing characteristics and intentions to the fetus, giving of self, roletaking, and nesting. After item analysis, the nesting subscale was eliminated due to low reliability. The remaining subscales were reported as having satisfactory levels of internal consistency and adequate validity.

Since its development, the MFAS has been used to measure prenatal attachment in association with a myriad of other variables (Curry, 1987; Davis & Akridge, 1987; Gaffney, 1986; Grace, 1989; Heidrich & Cranley, 1989; Kemp & Page, 1987; Koniak-Griffin, 1988; Mercer, Ferketich, May, DeJoseph, & Sollid, 1988). However, as Muller (1992) reports, drawing conclusions from studies using the MFAS is not easy because results have been inconsistent and even conflicting. Criticism of the instrument has included the possibility that information included in the MFAS items may act as an intervention promoting the initiation of an action that a mother might not have otherwise used. The validity of the tool in representing the

dimension of maternal-fetal attachment also has been questioned (Muller, 1992).

The second researcher, Muller (1989, 1993), developed the Prenatal Attachment Inventory (PAI) believing that those conducting prenatal research needed the use of an additional instrument to measure prenatal attachment. She reasoned that the consistent use of multiple valid instruments for measuring prenatal attachment would result in a resolution of the conflicting results which currently exist in the prenatal attachment research studies. Satisfactory reliability and validity has been reported for the 29 item PAI measurement of prenatal attachment. Although Muller (1993) claims that the PAI identifies prenatal attachment from a different perspective than the MFAS, both the PAI and the MFAS are purported to essentially measure the same construct. No studies have been found which use the PAI as a measurement of prenatal attachment.

In conclusion, there is evidence to suggest that the prebirth mother-infant relationship can be measured. However, the instruments available measure prenatal attachment as an outcome variable rather than as a process. In addition, a single measure is often used to indicate the status of the mother-fetal relationship and this may not be adequate to describe the dimension of attachment.

Variables Relating to Prebirth Attachment. Researchers have attempted to identify variables which influence the prebirth attachment

process. Many research studies have been done that compare and correlate numerous variables with prebirth attachment. The variables include maternal age (Cranley, 1981a, 1981b; Grace, 1989; Kemp & Page, 1987; Lerum & LoBiondo-Wood, 1989), parity (Condon & Esuvaranathan, 1990; Grace, 1989), physical symptoms (Lerum & LoBiondo-Wood, 1989; LoBiondo-Wood, 1985), a condition of pregnancy (Curry, 1987; Kemp & Page, 1987; Lerum & LoBiondo-Wood, 1989; Mercer et al., 1988; Reading, Cox, Sledmere, & Campbell, 1984), and self concept and anxiety (Gaffney, 1986).

From investigations into differing variables which may affect the prebirth relationship, researchers have found that quickening and gestational age have correlated positively with prenatal attachment (Grace, 1989; Heidrich & Cranley, 1989; LoBiondo-Wood, 1985; Reading, et al., 1984; Vito, 1986; Wu & Eichmann, 1988). Risk status in pregnancy consistently has been found to have no correlation with prenatal attachment (Curry, 1987; Kemp & Page, 1987; Mercer et al., 1988), although high and low risk subjects have been identified as distinct groups requiring differing theoretical or empirical models to predict maternal-fetal attachment (Mercer et al., 1988).

The conflicting and inconsistent results of these correlational studies may be a reflection of the instruments used to measure the variables. Muller (1992) proposes that the lack of conclusive results in the body of prenatal attachment literature may indicate that results of various studies are not

generalizable across groups. Furthermore, prenatal attachment behaviors may be influenced by cultural norms and family interaction, and if so, measurements may not be valid indicators of the construct. Alternatively, if measurements are valid indicators of prenatal attachment, the normal frequency range of these behaviors have yet to be established. In addition, the design of the studies done to date may be flawed contributing to the inconclusive results of this large number of studies. Randomization is not a common practice in these studies and larger samples may be needed to identify a true difference within the study group. Finally, only two studies (Davis & Ackridge, 1987; Heidrich & Cranley, 1989) report the use of pretest measures to measure existing levels of prenatal attachment in the study sample.

Effect of Interventions in the Prebirth Period. Researchers have attempted to discern the impact of specific interventions on attachment during pregnancy. The effect on prebirth attachment of ultrasound visualization of the fetus (Campbell, Reading, Cox, Sledmere, Mooney, Chudleigh, Beedle, & Ruddick, 1982; Grace, 1984; Heidrich & Cranley, 1989; Kemp & Page, 1987; Kohn, Nelson, & Weiner, 1980; Langer, Ringler, & Reinold, 1988; Milne & Rich, 1981; Vito, 1986), provision of knowledge of fetal gender (Grace, 1984; Wu & Eichmann, 1988) and the perception of fetal movements (Heidrich & Cranley, 1989; Mikhail, Freda, Merkatz, Polizzotto, Mazloom, & Merkatz, 1991; Zeanah, Carr, & Wolk, 1990) has

been investigated. Findings from these studies have been inconclusive. In two studies of the effect on the mother of ultrasound visualization, findings indicated that maternal concern and feelings for the fetus increased immediately after the examination (Kohn et al., 1980; Milne & Rich, 1981). Other researchers report no correlation of ultrasound with total MFAS scores (Heidrich & Cranley, 1989; Kemp & Page, 1987). Vito (1986), however, reported a relationship between ultrasound and the *giving of self* subscale on her revised version of the MFAS. Some researchers acknowledge that following ultrasound the maternal image of the child changes and becomes ". . . brisker, more active . . . more familiar . . ." (Langer et al., 1988, p. 199), and that the sensory information provided by the ultrasound about the fetus is informative and emotionally rewarding to the mother (Campbell et al., 1982). Research findings regarding the relationship between ultrasound and prebirth attachment may conflict if the study does not control for such factors as the reason for performing the examination, planned versus unplanned pregnancy, or a mother's experience of previous ultrasounds which may affect maternal attachment behaviors. These studies do not report controls for these factors in the study design.

Two researchers exploring the relationship between gender and parental prebirth attachment report that knowledge of fetal sex and the passage of time increased parental scores over time with the maternal score

increasing at a greater rate than the paternal score (Wu & Eichmann, 1988), but again these results conflict with those of another study (Grace, 1984).

Other researchers attempting to determine the effect of fetal movement and/or activity on prebirth attachment agree that mothers who report fetal movement early in the pregnancy have higher maternal fetal attachment scores (Heidrich & Cranley, 1989; Reading et al., 1984), whereas others suggest that the counting of fetal movements may enhance the maternal-fetal attachment process (Mikhail et al., 1991). Zeanah et al. (1990) found that mothers and fathers reporting more intense fetal activity also imagined the fetus to be more active. These studies used designs which included samples of mothers who varied in parity and gestational age, measurements conducted at various gestational weeks and different measurement tools. Therefore, the generalizability of the findings beyond these studies is limited.

In conclusion, findings of most quantitative research regarding prebirth attachment and assorted variables have been inconclusive and inconsistent. Only two variables have consistent positive correlations with prebirth attachment over a number of studies: quickening and gestational age.

Qualitative Research

Qualitative research methods also have been used by researchers to study the prebirth mother-infant relationship. Three studies have described a mother's beginning relationship with her child, conducted from the

perspective of mothers themselves. The first, a study of 30 primiparous women, used multiple pre and postbirth interviews and drawings of the fetus to determine how women imagine the fetus during pregnancy (Lumley, 1980, 1982). Of the 26 women remaining in the study to completion, eight reported feelings of attachment by 8-12 weeks gestation. All but two of the subjects reported feelings of love for the fetus after quickening. The researcher noted differences, deemed *late maternal-fetal attachment*, in women who expressed less emotional investment in the fetus, who experienced more unpleasant symptoms of pregnancy, and who felt a lack of interest and/or support from husbands. The findings from this study, however, must be considered in light of the fact that categories for data were developed before the interviews were coded, thus introducing the possibility of researcher bias.

The findings from the second, a qualitative study of 24 low-risk expectant couples interviewed during the third trimester of pregnancy, indicated that both prospective mothers and fathers can describe individual characteristics of their fetus, creating for each parent a sense of the unborn infant as a unique person (Stainton, 1985b, 1990). The third study, a longitudinal study of five women with varying high risk conditions, resulted in the development of a theoretical framework illustrating a high risk mother's connection to her unborn child, a process where self-protection or *guarding* affects their developing relationship (McGeary, 1991). The sample

in this study included one mother expecting twins but did not differentiate between her experience and the experience of the other mothers who were expecting a single child. In each of the qualitative research studies cited above, only small samples of women from Australia and Canada were included as subjects in the research. Therefore, conclusions may be drawn about the prebirth mother-infant relationship of women from industrialized nations only.

In conclusion, the mother's relationship with a single infant has been investigated both quantitatively and qualitatively. At present, limitations in methodological design exist which affect the generalizability of findings from this body of research. The limitations of quantitative studies concern the reliability and validity of the instrument used to measure the dimension of prebirth attachment, the utilization of a single measurement as an accurate indicator of a developmental process, and the lack of attention paid to the effect of differing cultural values and beliefs on the mother-infant relationship. In contrast with the quantitative literature, only a very few qualitative studies, each utilizing a small sample, have explored the mother-infant relationship. Recognizing this gap in the research literature, Cranley (1992) recently admitted that "the time may be at hand for a more open-ended exploration of how women themselves define the beginning relationships with their children" (p. 24).

The Mother-Twin Relationship

It is suggested that mothers encountering a twin pregnancy experience a distinctly different attachment process than do mothers pregnant with a single child (Gromada, 1981; Leonard, 1981; Showers & McCleery, 1984). However, no research has been found that addresses the relationship between a mother and her unborn twins. The variable of multiple pregnancy and how this may influence the developing mother-twin prebirth relationship does not appear to have been investigated. All the literature reviewed relates to a mother's relationship with twins after birth rather than before, although antenatal attachment is briefly acknowledged by Gromada (1981).

The theoretical literature discussing mother-twin attachment has focused on the difficulty a mother of twins may experience in attempting to bond after birth with two infants simultaneously (Dickerson, 1981; Gromada, 1981; Leonard, 1981). The explanation for this occurrence is Klaus and Kennell's (1976, 1982) principle of monotrophy, a theory where a mother has difficulty forming a close attachment to more than one baby during the critical or sensitive period immediately following birth. As discussed previously in this chapter, subsequent investigation into this theory has questioned the actual existence of a critical period and therefore the principle of monotrophy itself.

Corter's (1982) preliminary results of a longitudinal study of mothers of premature twins indicated that mothers have a definite *maternal preference* of one twin over another in the early postpartum period. This could be interpreted as support for the existence of a monotrophic theory. However, no connection was found between maternal preference at birth and the quality of the twin's attachment to mother at the age of one year as measured by Ainsworth's Strange Situation Method (Corter, 1982; Goldberg, Perotto, Minde, & Corter, 1986). If, indeed, a monotrophic principle actually exists, these results force one to question its significance.

The overwhelming task of physically caring for two infants and the lack of sleep experienced by mothers of twins has also been acknowledged by several authors (Anderson & Anderson, 1990; Corter, 1982; Goshen-Gottstein, 1980; Malmstrom & Biale, 1990; Theroux, 1989). These additional stresses for a mother of twins may have some influence on her ability to form an attachment to two infants during the postpartum period.

A review of twin research from 1955-1984 reveals only three articles generated from a nursing perspective (Showers & McCleery, 1984). In actuality, only one of these three articles, a survey, is research based (Abbink, Dorsel, Flores, Meyners, & Walker, 1982). It was completed retrospectively in an effort to prove or disprove the monotrophic theory. Eighteen mothers of twins were asked to describe differences in bonding with two babies in the post-partum period (Abbink et al., 1982). Five of the

mothers surveyed described bonding differences between the two infants in the early postpartum period. One of the 18 mothers described differences in bonding lasting to the time of the survey, but the researcher did not specify the length of this time period. Although providing a basis to question the monotrophic theory of attachment, this survey fails to provide information about important factors such as history/maturation of the subjects, or the timing of the actual delivery in relation to the survey, and instrumentation, or the content of the survey itself. In addition, six of the 18 mothers in the sample had experienced the opportunity to bond with their infants from previous pregnancies, an experience which may have influenced their responses to the survey. Therefore, these findings may be questioned. The remaining two articles are descriptive, theoretical discussions relating to aspects of twins such as emotion and individuation (Linney, 1982; Terry, 1975).

Frazer (1977) conducted a longitudinal case study of one multigravida to investigate the *work* involved in becoming a mother of twins. One task attempted by this mother was the identification of each of the twin babies both before and after birth. Frazer discusses the strategy of fantasy used by this mother to identify specific characteristics of each baby before birth, lending credence to Gromada's (1981) opinion that an awareness of and attaching to twin infants begins in the prebirth period.

Further evidence which may support both Frazer's and Gromada's findings about a mother's awareness of twin infants in the prebirth period appears in the results of a recent uncontrolled survey, completed retrospectively (Malmstrom & Malmstrom, 1988). A non-professional organization that surveyed 336 Canadian and American mothers who recently gave birth to more than one infant found that 71.1% of respondents reported suspicions of a twin pregnancy before medical confirmation was received. When self-diagnosing their multiple pregnancy, mothers had dreamed of a twin birth in 24% of cases. Due to the lack of controls in the design of this survey, these findings are at question and cannot be generalized.

Anderson and Anderson (1987, 1990) elaborated on the postbirth individuation of twin infants, qualitatively researching the process by which mothers develop a relationship with their twins during the first year of life. Although providing evidence to support Gromada's (1981) claim that a "mother of twins is dealing with an entirely different attachment experience than the woman who delivers a single infant" (p. 134), again the focus of this study was on the postbirth relationship between a mother and her twins, not on her antenatal one.

In conclusion, there is currently a paucity of literature pertaining to the mother-twin relationship especially in the prebirth period. Some authors propose that the mother-twin attachment experience may differ from that of

a mother and a single infant beginning in the prebirth period, but this proposition is not empirically based. A qualitative study, exploring the process and experience of a mother developing a relationship with unborn twins, would be of value in order to gain an understanding of this phenomena from the perspective of the pregnant woman.

CHAPTER III

METHOD

When choosing a methodology for a research endeavour, the researcher must select a method which will appropriately describe the phenomena to be studied. Both the nature of the research question and the maturity of the concept, or how much has been investigated about the topic, must be considered by the researcher when making this decision (Field & Morse, 1985). The purpose in this research study was to explore the relationship a mother has with her unborn twins. As evident by the literature review in the previous chapter, the mother-unborn twin relationship does not appear to have been explored to date. Therefore, a qualitative research methodology was chosen for this study.

In this chapter, the methodology of this research study will be discussed. The specific qualitative approach used in this research will be addressed, as will the research design, issues of reliability and validity, and ethical considerations.

Qualitative Method: Grounded Theory

In this research study, the researcher explored the process by which women who are pregnant with twins form a relationship with their unborn infants. A qualitative methodology was appropriate because it provided information in an area of inquiry where little information existed. In addition,

this methodology allowed the researcher to focus on the experiences of those participating in the study (Field & Morse, 1985; Simms, 1981; Stern, 1980).

A specific type of qualitative approach, grounded theory, was used by the researcher when conducting this study. This approach to qualitative research allows the researcher to generate theory from data utilizing a systematic set of procedures during the research process itself (Glaser & Strauss, 1967; Stern, 1980; Stern, Allen, & Moxley, 1982; Strauss & Corbin, 1990). Grounded theory attempts to capture the action/interaction strategies and evolving processes dominating the data in response to a particular phenomena (Strauss & Corbin, 1990). The research findings constitute a "theoretical formulation" of the phenomena under study (Strauss & Corbin, 1990, p.24).

Research Design

The research design of this study will be addressed through discussions of the sample, methods of data collection, and techniques of data analysis.

The Sample

Theoretical Sampling

When utilizing the grounded theory approach, the researcher uses theoretical sampling to select the sample. The selection of study participants is based upon their possession of certain characteristics or knowledge which

will assist the researcher to better understand the phenomena under study. This non-random selection of informants is necessary to facilitate the quality of the data obtained (LeCompte & Goetz, 1982; Morse, 1989). The qualities of a "good" informant are the possession of knowledge about the topic under study, an ability to reflect upon an experience and provide information about the phenomenon, and lastly the willingness to share experiential information with the researcher (Morse, 1989). All of the women participating in this research study possessed these qualities.

A basic tenet of theoretical sampling is its close tie to data analysis; the analysis of data guides the selection of subsequent informants. As categories and concepts requiring validation emerge from the data analysis, informants are selected on the basis of the additional information that they can provide which is necessary to advance the formation of the emerging theory (Field & Morse, 1985; Glaser & Strauss, 1967; Morse, 1989; Strauss & Corbin, 1990). Although the size of the sample in this study was not pre-determined, the researcher was referred informants who were nearing delivery so quickly that complete coding of data between interviews was not possible. However, the researcher was able to review each interview and note the themes which emerged from the data before interviewing the next informant. In this way, data from one interview served to direct the semi-structured questions used in the interview of the next informant. Because of

the sampling procedure used in this study, the sample type was purposive rather than theoretical (Field & Morse, 1985).

Recruitment of the Sample

Informants were recruited using the following methods. First, informants were sought from three obstetricians, specializing in perinatology, who were affiliated with two large city hospitals serving as referral centres for high-risk obstetrical care (see Appendix A). Six primary informants meeting the inclusion criteria were found through this approach.

Second, informants were sought from one obstetrician practicing in a small satellite community. One primary informant meeting the inclusion criteria was found in this manner. Third, information about the research study was presented at an executive meeting of a local club serving parents of twins and other multiples and an information letter was placed in the club's monthly publication (see Appendix B). This approach yielded three primary informants. Finally, an advertisement was placed in a city community newspaper (see Appendix C). No informants were found using this method.

Selection criteria for an informant's inclusion in this study were:

1. Women who were pregnant with live twins of 28 weeks, or greater, gestational age.

2. Women who could speak and read English.

3. Women who were willing to talk about and could articulate their experiences.

Ten informants met the above criteria. All of the informants in the study were interviewed at 32 weeks, or greater, gestational age, therefore their thoughts and feelings about the earlier weeks of pregnancy were captured retrospectively.

Two secondary informants were selected to clarify and verify the beginning theory of the mother-twin pre-birth relationship. In addition, two primary informants also verified the emerging theory. These women had expressed their feelings previously in a clear, articulate manner and were willing and indeed seemed eager to continue to participate in the study. The secondary informants had no previous knowledge of the study and were selected by the researcher because they had experienced a twin pregnancy and delivered live twins. They were known to the researcher through social contacts in the community.

One woman contacted the researcher when she was 22 weeks pregnant with her second set of twins and indicated an interest in participating in the study. Because she was experiencing multiple stresses in her life, the woman requested an interview at 26 weeks gestation. The researcher conducted this interview but the data was not used for the analysis because this woman did not meet the inclusion criteria for the study.

Sample Size

The sample size for this research study was not pre-determined because qualitative research methodology relies on the quality of the data obtained rather than the number of informants providing the data. The grounded theory approach requires that the collection of data continues until no new information is obtained to develop properties of the category (Field & Morse, 1985; Glaser & Strauss, 1967; Strauss & Corbin, 1990). Twelve women were informants in this research study.

Characteristics of the Sample

Biographical information was collected from each informant in order to further describe the research sample for the reader. It is important to note that the information collected in this manner was not deemed relevant to the developing category and theory unless it emerged from the data during the data analysis (Glaser, 1978). The ten primary informants represent a diverse population in terms of age, income, and parity. However, they tend to represent a lower middle to upper class population. They are homogeneous in terms of ethnic background; all informants were Caucasian.

The primary informants ranged in age from 24 to 36 years with a mean age of 28.8 years. Nine of the informants were married. One of the informants indicated that she was living in a stable relationship. Nine of the informants reported that they were working outside of the home at the onset

of pregnancy. One informant was self-employed within the home. All had ceased these occupations at the time of the first interview.

The highest level of education obtained by the informants varied. All informants had completed high school, five had attended college/technical school and two had completed some courses at the university level. One informant had a university degree. The annual family income of the informants varied, with two reporting incomes of $20,000 to $29,999, two reporting incomes of $30,000 to $39,999, and one reporting an income of $40,000 to $49,999. Five informants indicated annual family incomes greater than $50,000. The range of income and education demonstrates variability across population parameters which is worthy of note.

For three of the informants this was the first pregnancy, whereas it was the second for another three informants. One informant indicated that this was her third pregnancy, whereas three informants indicated that this pregnancy was their fourth.

This pregnancy was the first twin pregnancy for all of the primary informants. Gestational age of the informants at the time of the first interview varied from 32 to 39 weeks. Of the ten women interviewed three had experienced previous miscarriages. Two of the informants reported fertility problems prior to this pregnancy. For these two women the current twin pregnancy occurred with the assistance of medical intervention. Nine of

the informants had planned this pregnancy, while one woman indicated that the pregnancy was not planned.

The informants discovered that they were pregnant with twins at differing times during the pregnancy. The occurrence of the diagnosis of twins during the woman's pregnancy is presented in Table 1.

Table 1

Occurrence of Diagnosis of Twin Pregnancy

	Gestational Weeks					
Informants	5-8	9-12	13-16	17-20	21-24	25-28
n=10	3	2	2	1	1	1

Of the ten informants interviewed, five were aware and five were unaware of the sex of their unborn twins at the time of the first interview.

The ten primary informants delivered healthy twins at varying gestational ages. The occurrence of delivery is presented in Table 2.

Table 2

Occurrence of Delivery

	Gestatational Weeks				
Informants	36	37	38	39	40
n=10	1	1	4	3	1

Eight informants delivered their twins vaginally. One informant underwent a Caesarean section delivery, and one informant delivered the first twin vaginally and the second twin by Caesarean section.

Data Collection

Interview Process

Twenty interviews were conducted with the primary informants over a four month time period. Each of the ten primary informants was interviewed twice, once in the last trimester of the pregnancy and once at about six weeks postpartum. The exact timing of the antepartum and postpartum interviews are presented in Table 3.

Table 3

Timing of Antepartum and Postpartum Interviews

	Gestational Weeks					
	32	33	34	35	37	39
Number of Interviews	1	2	3	1	2	1
	Postpartum Weeks					
	5	6	7	8		
Number of Interviews	1	4	4	1		

Timing the interviews in such a manner allowed the researcher to collect data reflecting a woman's relationship with her unborn twins over time. At the time of the first interview, the pregnancy had been deemed viable and the threat of extreme prematurity had passed for all informants. The timing of the second interview allowed the researcher to collect data which reflected the mother-twin relationship between the time of the first interview and the time of delivery. In addition, the second interview allowed the researcher and the informant closure on their relationship.

Fieldnotes were recorded immediately following each interview. These reflected the researcher's thoughts and impressions of the interview and setting, the appearance and non-verbal behaviors of the informant, and contained notations regarding the interview process such as interruptions. Each interview was tape-recorded and transcribed verbatim by a typist. Biographical information was collected from each informant prior to beginning the first interview (see Appendix D).

Each of the informants was interviewed alone at the request of the researcher in an attempt to obtain data from the emic perspective without the influence of other individuals. Interviews were scheduled at a time convenient to the informants. In all but three of the antepartum interviews, the researcher and informant were completely alone. During the three remaining interviews, a child was asleep in another room. Eight of the postpartum interviews were conducted while one or both twins were present

in the home. During three of these postpartum interviews, the twins were present in the room during the interview.

The interviews were informal. Initially in the interviews, the researcher allowed the informants to discuss whatever they wished regarding their pregnancy in an effort to avoid predetermining the topics for discussion. Guiding questions were used to focus the interviews when necessary (see Appendix E) but were not used until the informants had spontaneously related their thoughts and feelings regarding their pregnancy and their relationship with their unborn twins. The researcher made a conscious effort to allow the informants to voice their thoughts and feelings without interruption. As the interviews progressed and initial data analysis began, additional guiding questions were developed and used with subsequent informants to clarify and verify data collected from those informants previously interviewed. Again, these additional guiding questions were introduced only after the informants had spontaneously related their thoughts and feelings regarding the experience of their twin pregnancy.

Contact was maintained with each informant via telephone following the first interview. This allowed the researcher to note the progress of each informant through her pregnancy, to determine the date of delivery, and to remain informed of the status of both mother and twins immediately after delivery and during the postpartum period. This continued communication maintained a rapport between the informant and the researcher which

created the potential for increased disclosure of the woman's thoughts and feelings regarding her pregnancy experience.

Interview Setting

The informants chose the setting for each interview. Choice of setting and familiar surroundings may have contributed to the relaxation felt by the informants and therefore to their comfort and participation in the interview process. Seven of the antepartum interviews were conducted in the informants' homes in a room preferred by the informant. Three of the antepartum interviews were conducted with informants in a private conference room in the hospital following an appointment with their physician.

One postpartum interview was conducted in a hospital conference room at the time of the informant's appointment with her physician. Nine postpartum interviews were conducted in the informants' homes. One informant's husband took both twins out of the home during the interview, and another took one twin away from the home during the interview. During four postpartum interviews, the twins were in another room in the house being cared for by their father. During the remaining three postpartum interviews, both twins were present in the room with the informant and the researcher on two occasions, and one twin was present on one occasion. During these instances the twins slept. If the twins awakened during the interview, attempts were made by the mother and the researcher to comfort

them. This occurred during the latter portion of three interviews. Attempts to comfort the twins were successful on these occasions, therefore the researcher did not terminate the interview.

Data Analysis

The grounded theory approach to qualitative research generates theory from data utilizing a systematic set of procedures during the research process itself. The constant comparative method of joint coding and analysis was used to generate a beginning theory, grounded in the data, of the relationship between a mother and her unborn twins (Chenitz & Swanson, 1986; Field & Morse, 1985; Glaser, 1978; Glaser & Strauss, 1967; Stern, 1980; Strauss & Corbin, 1990).

The data analysis began with data collection. Twenty interviews with primary informants were completed by the researcher during a four month time period. All of the interviews were tape recorded and transcribed verbatim by a typist. The transcribed data was then hand-coded by the researcher.

Data analysis began following the first interview. The researcher reviewed each transcription in detail, line by line, to identify themes or codes in the data. Notes describing the theme were made on the large right hand margins of the transcriptions. As the researcher continued interviewing informants, each unit of data in the transcription was compared with those of previous transcriptions and themes common to each interview began to

emerge from the data. Each unit of data pertaining to a common theme was separated from the transcription and placed in a file folder. In this way, the researcher was able to compare the data obtained from all of the informants as a whole and also compare one informant to another. In this initial process of open coding (Strauss & Corbin, 1990), thirteen themes pertaining to the relationship between a mother and her unborn twins were identified.

This method of constantly comparing the data obtained from one interview to that obtained from another continued through the antenatal and postnatal interviews. This allowed the researcher to compare units of data obtained from different informants as well as compare units of data obtained from the same informant. As the interviews progressed, the information obtained from one informant began to direct the interview of the next informant. In this way, the researcher was able to validate and clarify information as the data collection and analysis proceeded.

When the data collection from primary informants was complete, units of data reflecting common themes were grouped into categories. Connections between categories were made utilizing the process of axial coding (Stern, 1980; Strauss & Corbin, 1990). This process allowed identification of the properties of each category, assisting the researcher to isolate its antecedents, consequences, conditions and the context surrounding each category.

A core category, *accommodating*, was identified through the process of selective coding (Strauss & Corbin, 1990). The core category and its relationship to other categories was represented in a paradigmatic model. A story line reflecting the categories and processes involved in the mother-unborn twin relationship was developed. This story line was reviewed by two secondary informants and two primary informants who verified and clarified the process and the core category of accommodating.

A second literature review was completed after identification of the process, core category and sub-categories. The knowledge obtained from this literature review and the process identified in the data resulted in the development of a beginning theory. This theory, grounded in the data obtained from the primary informants, identifies and describes the process involved in the mother-twin relationship from the diagnosis of the twin pregnancy until birth.

Although the data analysis procedure can be explained in a linear sequence, it is important to note that the coding processes were carried out concurrently as the researcher continued to interview informants and moved between the inductive and deductive modes of analysis. The data analysis was assisted at all stages through the use of memos, theoretically identifying relationships between themes and their properties, the core category and other categories.

Purposive sampling, data collection and analysis continued until theoretical saturation was reached. This is described as the point at which all of the major concepts have been explored and no additional information was emerging to further develop a category (Chenitz & Swanson, 1986; Field & Morse, 1985; Glaser, 1978; Glaser & Strauss, 1967; Strauss & Corbin, 1990).

Issues of Reliability and Validity

The way in which reliability and validity are assessed in any research study depends upon the purpose and type of that particular study (Field & Morse, 1985). The purpose of this study was to gain an understanding of a mother's relationship with her unborn twins from the emic perspective using a qualitative methodology. As this study did not involve measurement or theory testing of the mother-twin relationship, it was appropriate to use qualitative criteria to evaluate the methodology of this study (Kreftig, 1991; Sandelowski, 1986).

Four criteria have been proposed to assess rigor in qualitative research in order to establish trust in the outcomes of naturalistic inquiry (Guba & Lincoln, 1981). These criteria, adapted by Sandelowski (1986), were used to assess the reliability and validity of this study. The criteria include credibility, fittingness, auditability and confirmability.

Credibility

Credibility refers to the truth value inherent in the findings of the study (Guba & Lincoln, 1981; Kreftig, 1991). A credible qualitative study presents a description of human experience that informants will recognize as their own (Sandelowski, 1986).

Several strategies were used in this study to enhance credibility. First, the informants were interviewed over time, providing the researcher an opportunity to verify earlier observations and add depth to previously collected data. Second, as it has been suggested that the researcher's accuracy in interpreting a situation will be increased if the researcher is close to the informants (Field & Morse, 1985), informants were interviewed more than once and contact was maintained with the informants between the first and the second interviews. This enhanced the formation of a trusting relationship which potentially promoted openness in dialogue. To avoid researcher immersion in relationships with the informants, continual assessment of the reciprocal influence of researcher on informant was addressed in fieldnotes during the research process.

Third, the researcher contributed to this study her unique experiences as a nurse with a special interest in obstetrics and a common experience with multiple pregnancy. This factor increased the researcher's sensitivity to and understanding of the behaviors of these mothers, allowing more accuracy and depth in interpretation of data. Indeed, the fact that the

researcher had experienced a multiple pregnancy seemed to be very important to the informants. All of the mothers questioned the researcher about her experiences and expressed opinions that the researcher's experience allowed her to understand the mothers' situation to a greater degree than others might. In addition, a personal journal was written by the researcher during the research process to provide an opportunity for reflection and for recognition of beliefs and values to reduce the possibility of bias on the developing theory.

Credibility also was enhanced by sampling an additional two secondary informants to validate the developing theory and by verifying the emerging theory with two of the primary informants. When given a story line and a simple paradigmatic model of the process to read, all of these women recognized their experience of twin pregnancy in the findings.

Fittingness

Fittingness refers to the applicability of the research findings. Because qualitative research findings are the result of a particular researcher interacting with particular informants within a particular context, the resulting data is a reflection of the sample of informants included in the study. To evaluate the applicability or fit of the study into contexts outside the study itself, the sample of informants must be evaluated (Sandelowski, 1986).

The appropriateness and adequacy of the sample is critical to the quality of the research (Morse, 1989). Appropriateness refers to "the degree to which the choice of informants and method of selection 'fits' the purpose of the study as determined by the research question and the stage of the research" (Morse, 1989, p. 122). Purposeful or theoretical sampling was chosen as the method of sampling which would best provide information facilitating understanding of the mother-twin relationship. Sample selection in this study was guided by primary informant characteristics, such as twin pregnancy, gestational age and the ability to provide experiential information. The selection of secondary informants for inclusion in the study was based on their willingness to participate in the study, their ability to express thoughts and feelings, a previous twin pregnancy experience and the subsequent delivery of live twins and their ability to read and understand English.

Adequacy refers to "the sufficiency and the quality of the data obtained" (Morse, 1989, p. 123). The relevancy, completeness and amount of information obtained from the informants was assessed immediately after each interview using fieldnotes. Following receipt of transcriptions from the typist, additional notations were made concerning these factors. To ensure that relevant data was completely and correctly coded, coding was done initially with the assistance of the thesis supervisor. In addition, the thesis supervisor assisted the researcher to assess the relevancy, completeness

and amount of information obtained from the informants, and to validate categories and emerging theory. The researcher ceased sampling when interviews of informants did not yield new information and an understanding of the pre-birth relationship between a mother and her twins was achieved. Two secondary informants and two primary informants were chosen to validate the developing theory and further ensure adequacy. These informants recognized their own experience of twin pregnancy in the findings of this study.

Auditability

Auditability refers to the ability of another researcher to follow clearly the "decision trail" used by the researcher in the study (Sandelowski, 1986, p. 33). Auditability was enhanced through audio-taping of the interviews, writing of fieldnotes after the interviews, writing of notations and code notes after receipt of the interview transcriptions and the generation of memos during data analysis.

Confirmability

Confirmability refers to the meaningfulness of the study findings. This "is achieved when auditability, truth value, and applicability are established" (Sandelowski, 1986, p. 33). Confirmability will be determined when the findings of this study are reported and others find them useful.

Ethical Considerations

Several strategies were used by the researcher to ensure that this study was conducted in an ethical manner. First, the researcher received ethical approval of this research study from the Ethical Review Committee of the Faculty of Nursing, University of Alberta.

Second, after receiving information regarding the purpose, objectives and time commitment involved in the study, each informant participating in the research project signed a written consent form (Appendix F & G). Informants accessed via the physician's office were told that further antenatal care did not depend on participation in the study. All informants were told that they had the right to decline to participate in the study, that they were free to withdraw from the study at any time, and that they would not be identified by name in the study. No informants withdrew from this study. If a complication during pregnancy or delivery had occurred, the informant would have been asked if she wished to withdraw from the study. No such complications occurred.

Third, the identity of the informants was known only to the researcher. A number assigned to each informant was used to identify the informants on audio tapes, transcriptions and fieldnotes. In the final report, the informants were assigned numbers. Other information given by informants during the interviews which may provide identification, such as names of family members, doctors or hospitals, was revised using fictitious

names and/or initials. Consent forms identifying the informants will be kept for a 5 year period and then destroyed. Informants were told that the transcriptions and fieldnotes may be used for another study in the future, if the researcher receives ethical approval.

CHAPTER IV

FINDINGS

Once the data analysis began, it became apparent that the initial purpose of this research, which was to identify, describe and propose a beginning theory of the relationship between a mother and her unborn twins, would fail to describe the entire process of womens' experience of their twin pregnancy. Women did discuss their relationship with their unborn twins but their experience of relating occurred within the larger context of accommodating their lives to fit a twin pregnancy. Because the generation of grounded theory occurs around a core category describing a pattern of behavior which is "relevant" and "problematic for those involved" (Glaser, 1978, p. 93), **accommodating** was identified as the core category emerging from this data. Accommodating may be viewed as a basic social process as it occurs over time and theoretically accounts for variation in behavior which continues irrespective of place (Glaser, 1978).

Ten primary informants discussed their experiences of twin pregnancy with the researcher. Although each individual's story will not be related, these findings reflect the common experience of these women.

In this chapter, a summary of womens' experience of twin pregnancy will be presented. Following this, the findings of this research related to the basic social process of accommodating will be presented in both text and in

a schematic model (see Figure 1). Although the findings will be presented in a linear fashion to ensure clarity, it is important to note that grounded theory may be viewed as a transactional system, "a complex web of interrelated conditions, action/interaction, and consequences that pertains to a given phenomenon" (Strauss & Corbin, 1990, p. 161). Thus, antecedent conditions to the core category of accommodating will be presented, followed by the processual action/interaction strategies used to manage this phenomenon. Next, the consequences of the action/interaction strategies will be presented. The process of accommodating a twin pregnancy occurs within the context of time expressed as gestational weeks and of maternal emotion. These contextual conditions, and any intervening conditions which may constrain or facilitate the strategies for each informant, will be presented as they relate to each step in the transactional system. Additional notations regarding context and pertinent observations made during the interviews of informants precede the conclusion to this chapter.

In the text, each quotation from an informant will be followed by two numbers which indicate the source of the data (see Appendix H). The first number indicates which informant is providing the data. The second number indicates whether the quotation originated from the first or the second interview. For example, 01-2 indicates the quotation is from Informant 01 and originated from the second interview. Secondary informants are identified by pseudonyms (see Appendix I).

Experiencing a Twin Pregnancy: A Summary

The main theme emerging from the data concerns the way in which women who have been diagnosed with a twin pregnancy accommodate their pregnancy into their lives. They change plans they have already made and begin to make room for two babies, rather than one in their life. Women begin to think about the future with two, relate to two, and physically make preparation for two. This assists women to move towards the reality of a twin pregnancy.

At the same time as women begin to change plans, they seek information related to twins. This assists them to prepare and form a plan about their future and gives them information concerning the progress of the pregnancy. Women compare their knowledge of pregnancy with their knowledge of this pregnancy and assess their own level of risk. This personal risk assessment influences whether women continue to seek information or whether they engage in protective behaviors of self and/or their unborn infants. Their level of confidence concerning their pregnancy increases or decreases depending on their personal assessment of risk. Risk assessment continues throughout the pregnancy. Perceived risk decreases as gestational age increases and women move towards the reality of a twin pregnancy. Moving toward the reality of a twin pregnancy continues until the birth of twins. The birth confirms the reality of the pregnancy.

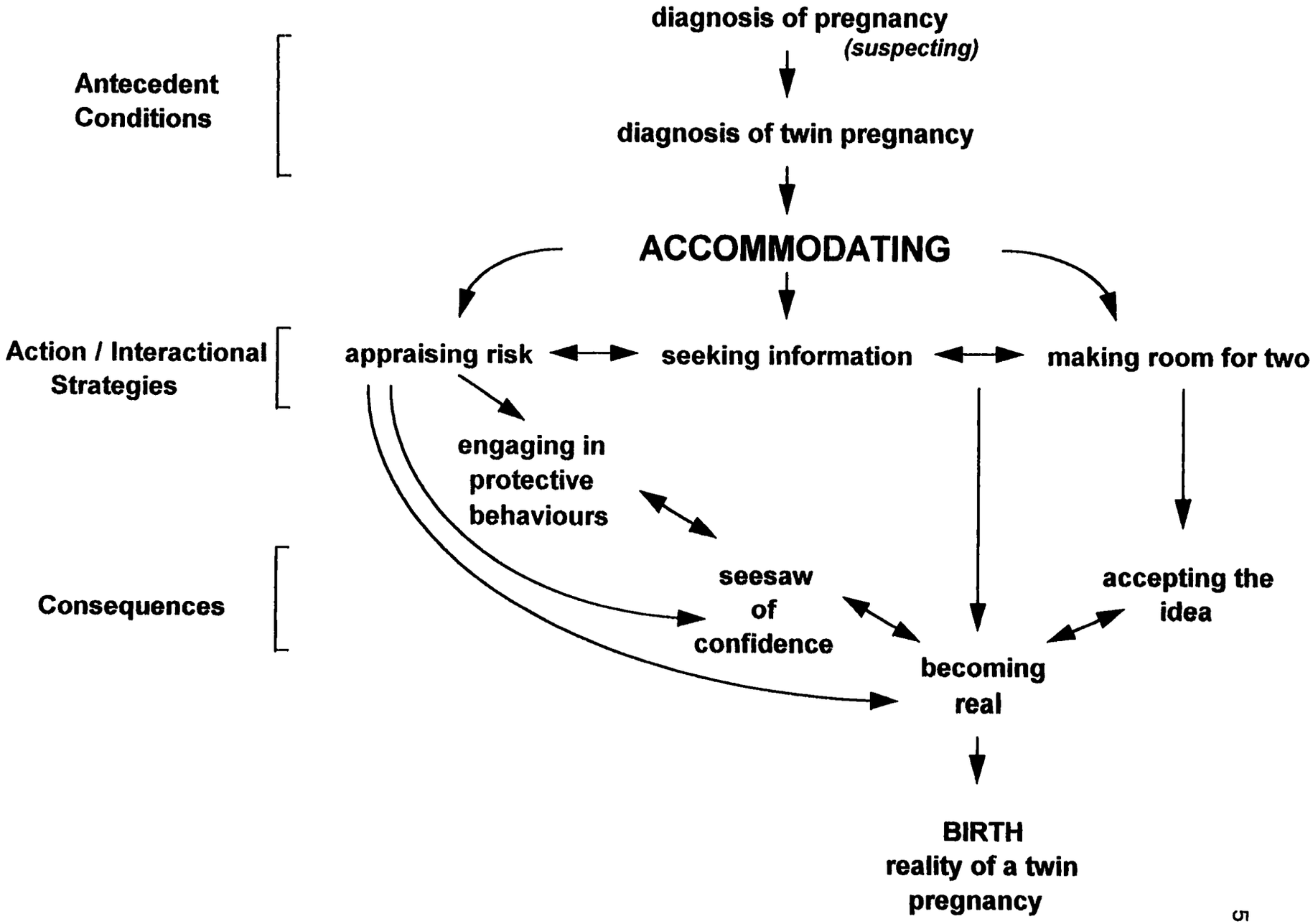


Figure 1. The Process of Accommodating a Twin Pregnancy

Accommodating: A Basic Social Process

Antecedent Conditions

Antecedent conditions are defined as "events or incidents that lead to the occurrence or development of a phenomena" (Strauss & Corbin, 1990, p. 100). In these findings, the diagnosis of pregnancy, suspecting that the pregnancy was not proceeding as it should and finally, the diagnosis of twin pregnancy led to the occurrence of the core category of accommodating.

Diagnosis of Pregnancy

All of the informants were diagnosed as pregnant prior to the discovery that they were pregnant with twins.

Suspecting. Although the suspicion of a twin pregnancy was not common to all informants, five of the ten primary informants suspected that they were carrying twins following the diagnosis of pregnancy. Of these, four were multiparous women and one was a nulliparous informant.

Five of the primary informants reported that they did not suspect they were pregnant with twins, however, two of these women who became pregnant with the assistance of medical intervention knew that the incidence of twins was higher due to their treatment. One multiparous woman who did not suspect she was carrying twins was not surprised at the diagnosis of twins because she was aware that the incidence of twins increased with advancing maternal age.

Informants suspected they were pregnant with twins for various reasons. Two informants reported noticing an increase in size:

> I was afraid it was because I was getting big. There was a lot of things happening to me that didn't happen with her and it felt just so different . . . (09-1)

> Because I was getting big fast. That was about the only thing and I thought it was a big baby but since I had one before I didn't start showing till I was about four months and I was two months and I was already getting big so I figured something is up. . . . I just know it's twins. (07-1)

Early sensations of fetal activity also caused suspicions of a twin pregnancy:

> They were moving early and I told the doctor and he goes, no, you must be imagining it and then we found out it was twins and so that was why. (03-1)

The reactions of the ultrasound technician during a prenatal assessment precipitated a suspicion of twins for one informant:

> Actually, I suspected it when she was doing the ultrasound because all of a sudden she turned the screen away from me and then I didn't find out till the next day that I was having twins but all that night it was like, it's like there's two in there wrestling or something, you know, like I had something in my mind subconsciously saying that you're having twins but I don't know. (05-1)

Other informants reported suspecting they were pregnant with twins because of a dream or a feeling that they just "knew":

> That it must be, it has to be twins but then I'd always have my doubts because I'm a twin and twins aren't supposed to have twins but then I'd catch myself on that and I'd say, no, that can't be right. I know I'm having twins. I just know it. I don't know how. I just did. (07-1)

> . . . and it was like I knew and I kept saying to my husband what if it's twins? And he kept saying, it's not. . . . I had a feeling. I sensed it but at the same time you don't really believe it. (02-1)

> Well, way back actually in the beginning of the pregnancy I dreamt we had twins. Before we knew anything. . . . I think subconsciously something must have told me if I was dreaming about it, and if I mentioned it to A., like something . . . . (03-1)

Suspicions that their pregnancy was not a single pregnancy led women to react in different ways. Prior to receiving a diagnosis of twin pregnancy, three informants told others that they were expecting twins:

> On the day of the first ultrasound I told A. well, today we go in and we are going to see our twins . . . (03-1)

> I'd tell people I bet you I'm having twins. I don't know why and then I started thinking about it and I thought well, maybe you shouldn't be telling people this. The doctors keep telling me there's one. They'll just probably think I'm crazy. (07-1)

> I was just so sure and instinctively like I kept telling people . . . . (02-1)

A suspicion that her pregnancy was not progressing as it should led one nulliparous informant to verify her sensations of fetal activity with friends:

> Like I knew there was something. You know, like I kept asking my friends well, just how active was your baby when it was in you and they would say well (draws out last word) . . . (05-2)

Two informants discussed their suspicions with their physicians resulting in the diagnosis of a twin pregnancy following an ultrasound examination:

> At three months I was telling him it's like I feel like I'm getting bigger than I should be and he felt around and he thought that it was getting quite big too so then he sent me for an ultrasound. (09-1)

> I went back to the doctor's and I, he checked the heartbeats and all that and they only found one. O.K. My doctor was out in CITY and so I saw him a few times and then I had to transfer to a doctor in CITY so I had to wait a few months for that. When I went to see him the first time, I said check here for a heartbeat, check here for a heartbeat. I just know it's twins. He said, "Do you think so?" and I said, yes, I think so and he said, "No, I think it's one". So I made him check all over and he could only find one. He booked me for an ultrasound and I went to my ultrasound and it seemed to be taking a long time and I'm thinking something is up. (07-1)

Thus, various factors led several women in this study to question the status of their pregnancy. Informants then sought confirmation of their suspicions with others such as friends and physicians.

Diagnosis of Twin Pregnancy

An ultrasound examination confirmed the diagnosis of twin pregnancy for all informants. Although the diagnosis of twins occurred at differing gestational weeks for the informants (see Chapter III), confirmation that the pregnancy was a twin pregnancy resulted in intense maternal emotions.

Ambivalent emotions were expressed by informants:

> I was happy and bewildered and really surprised. I was laughing and crying at the same time. (11-1)

> I cried and I cried. I couldn't stop crying. It was just too exciting and . . . (07-1)

> Thrilled but scared, yes. (04-1)

One informant, who suspected twins, told the ultrasound technician that she was already aware of the twin diagnosis because she wanted her suspicions confirmed right then. She describes physical sensations accompanying her emotional reaction to the diagnosis:

> I could feel my whole face go red. I could feel my whole body just go like really red and really dropped but I didn't want to cry because I didn't want her to think that I was, I didn't really know about all this stuff so I didn't. I waited . . . (09-1)

Intense emotions such as shock, fear, anger and feelings of being overwhelmed were also experienced by informants when they discovered they were expecting two babies:

> Shock was definitely the first one. I don't know if there was any fear because I don't think that came till later. I don't know. I had anger later, not immediately because of my preconceived ideas of what I wanted a child to be for my son so I was angry that there were going to be two . . . It's just an overwhelming concern about everything else, financially, everything. I just felt what an overwhelming responsibility. (08-1)

> Like just I was really scared. Like I could just feel myself trembling inside but I waited until after I left the office and then I just started crying. I cried all day . . . . I just, I was scared. I was just really scared and shocked and . . . (09-1)

For those women who suspected that they were expecting twins, surprise was expressed but the diagnosis also confirmed their suspicions that the pregnancy was not progressing as they felt it should:

> When you first hear it you just laugh and you laugh and you can't believe it's really happening and you go twins, you know, but it surprised me but it kind of cleared up a lot of things in my mind that I had been kind of questioning. (05-1)

> I was surprised but not surprised. [giggles] A little bit scared as well . . . . It more or less put my mind, I was right and it is for sure now. It is for sure. I don't have to be left wondering anymore. (07-1)

Diagnosis of pregnancy, suspecting that the pregnancy is not progressing as it should and finally, a diagnosis of twin pregnancy are the antecedent conditions to the process of accommodating a twin pregnancy into a woman's life. These precede the action/interactional strategies which were used by the informants.

Action/Interactional Strategies

Action/interactional strategies are those goal-directed, processual strategies undertaken in response to or in order to manage a phenomenon (Strauss & Corbin, 1990). During the process of accommodating as a result of a twin pregnancy diagnosis, the action/interactional strategies undertaken by the informants were seeking information, making room for two, appraising risk and engaging in protective behaviors.

Seeking Information

After receiving the diagnosis of twin pregnancy, women in this study immediately sought information about twins. Informants hoped that the information they received from books would assist them to identify differences between this pregnancy and others and to identify whether the pregnancy was progressing as it should. Women also hoped that information about twins would assist them to form plans and prepare for their future:

> . . . and immediately when I was, found out I was having twins my immediate response was go out and get books and read, read up on all this so that I was a little more informed and that's how I sort of formed my plan on how we should be looking at things, I think, but I don't know. (08-1)

> Well, I really didn't know what I was looking for because it was right immediately after I found out that I was having twins so I just went to bookstores and I asked them any books on twins, having them, carrying them, raising them . . . . But I was really interested in looking for stuff just about carrying them to begin with, getting through your pregnancy because I was experiencing so many things that I didn't with S. and I just thought there's got to be a remedy for all these things but . . .(09-1)

Informants hoped that the information they found would assist them in defining the risks associated with the pregnancy:

> And I read a lot of books too so, you know, in the books they tell you things that are signs of a good pregnancy and things to look for if something's wrong and I really educated myself a lot on having babies actually with both pregnancies. (09-2)

Informants experienced difficulty finding the information they felt they needed from books. They found few available resources which addressed their concerns:

> I mean, well, I was going through books before that, you know, how is it supposed to feel? How are you supposed to know and oh, I'd go through books and I'd be reading and it would never really specifically say . . . . (07-2)

> That was like my Bible and I would just love it if there was one out for twins. That would just be an excellent book but there's nothing, absolutely nothing like that out there at all and even the one twin book I got, it's called "Twins from Conception to Birth, or to Five Years" and even that I find it's very light on information especially about carrying them and having them and the first year of their life. (09-1)

> That's one thing is I've been reading as much as I can and everything I've read has been related to single births and single pregnancies so I find it's hard to find information. (11-1)

In addition to seeking information from books, the informants also sought information from their physicians:

> Just basically like if I felt something odd or had a concern I wouldn't let it sit. I would ask, see, I would phone the doctor right away just to make sure it was normal. (01-1)

> If I have a question, I basically have to wait until I come to the doctor's office and ask them about it. (11-1)

Informants' immediate need for information was not met with the resources they found. However, they continued to seek information from their physician and to read throughout their pregnancy.

Making Room for Two

In addition to seeking information, informants began to accommodate the twin diagnosis into their lives by making room for two babies. They changed plans they had already made and began thinking of the future with two, physically preparing for two and relating to two. The mental and physical readjustment of making room for two babies required time but it assisted the informants to accept the idea of having twins.

Changing the Plan. Prior to receiving the diagnosis of twins, informants had made plans for their future with one new baby. These plans had to be adjusted to fit the new addition to the family unit:

> You have to change the whole plan, because when you try to get, when you're working at having a baby and you plan, like you anticipate and you think of what the future will be like and

> you vision yourself with three [children] and you plan that and you decide all right, well, you know, this is how it's going to work, this way and that way and then all of a sudden you find out there's two and those plans no longer fit. They have to be changed and you have to change but that takes time. (02-1)
>
> You usually only expect one and when you are told it is two it kind of throws you off course kind of for awhile. [pause] I don't know. It does throw you off course. . . . You've got to kind of rearrange it all. (04-1)

One informant, who became pregnant through medical intervention, hoped for twins and discovered she was pregnant with twins at 5 weeks gestation. She readjusted her future so it did not include additional interventions to become pregnant:

> Oh, there was the plan that it might not have worked and that sort of I had to have in my mind. I always went down there hoping it would work but I always had it in the back of my mind if it didn't work. You know what I mean? There was always that unsure and scared feeling right until I found out . . . (01-1)

Changing the previous plans that the informants had made required both mental and physical rearranging:

> . . . just for me to be looking at the whole situation differently. (08-1)
>
> Mmm, just by thinking about it every day, you accept it. (04-1)
>
> Well, it required a lot of figuring out well, where are we going to get two of this and two of that and two of everything else . . .(05-1)

Readjusting and rearranging their plans allowed informants to begin accepting the idea of being pregnant with twins.

Thinking of the Future with Two. To assist informants to mentally make room for two babies in their lives, they thought of the future with two babies. Informants expressed doubt about their ability to cope with two babies in addition to the workload they already carried in the home:

> I have trouble comprehending even like how to breastfeed two and how to, how we are ever going to manage diapering two and how we're, you know, thinking through all these things, how we are going to manage to do all that and get it all done . . . . How do you ever do that? Like it's just not possible. (05-1)

> What do you do when they're both crying, when they're both hungry and I'm breastfeeding so like am I going to be able to be coordinated enough to feed them both at the same time if need be and hold them, like being that I have a really bad back and stuff and I had a hard time carrying her [daughter] around but to have two crying. (09-1)

Informants expressed feelings of fear, worry and uncertainty about their future with two babies:

> I get quite nervous about that. How, I hope I'll be able to manage to take care of the two and, you know, those kind of things. They sit heavy on my mind at times . . . (05-1)

> I'm more worried the part about am I going to be a good enough mother for three kids all of a sudden, from one to three? But he [husband] keeps reassuring me and then I feel better and . . . (03-1)

> . . . I can handle that [one baby], you know, but then you find out it's two and you just kind of start to doubt yourself. (04-1)

One informant also worried about the enforced isolation that having two babies in her life would bring:

> I worry a lot. Just that I'm going to be alone, by myself. I keep thinking I have nobody. Not my husband, nobody. I'm going to be here in this little house with these little babies, nowhere I

> could go and I'm not going to be able to get to the mall and how am I going to do that and if I do go to the mall what if all three of them start crying and . . . (09-1)

Informants were able to recognize the changes in their lives that mothering two babies would bring:

> . . . inevitably, it's you as a mother who often has to, you know, it was going to be my body that was going to go through these immense changes and it was going to be my career that was going to have to be altered once more and it was going to be, you know, me who had to try and find time for everything and they are not even born yet and I can anticipate that. (02-1)

Anticipating the future with two babies to care for was an act filled with fear and uncertainty for informants. However, thinking of the future with two assisted informants towards accepting the idea of being pregnant with twins.

Physically Preparing for Two. In addition to mentally preparing for the birth of twins, informants physically prepared for two. Physical preparation included preparation of the environment:

> I just, I guess I need more things, another crib and so on. Right now I just have one crib which I'm not too worried about. It will be easier to shop after. I have the double stroller. Lots of diapers. I'm all prepared that way. (07-1)

For one informant, physical preparation for two babies provided tangible evidence that she was pregnant with twins:

> In my mind I rearranged things because like I said, we were expecting one and then it's two. It's like oh, now I need two of this and two of that and in your mind you, when you think of one you think, O.K., one at a time. (04-1)

Informants considered the financial implications of soon having two babies in the household rather than one:

> I really want to stay home with my babies until they are two but financially it's going to be really hard. (07-1)
>
> I was scared because it's scary to have twins especially when you think of the extra financial burden, don't know if you can handle it. (04-1)

At the time of the antenatal interview, two of the seven informants who were interviewed in their homes invited the researcher to view the room prepared for the twins. Other informants had physically prepared their homes for the birth of two infants in a different manner. One informant, who indicated that finances precluded her family from moving to a bigger home, had transformed the living room into a bedroom in order to have all of the children and parents sleeping on the same level in the home. Another informant had converted her dining room into a baby care area containing a diapering area, a bathing area, laundry and toy storage. These preparations provided tangible, visual evidence that two babies were expected and thereby allowed women to affirm that the pregnancy would result in two babies.

Relating to Others. Informants found that the diagnosis of twins rather than the diagnosis of pregnancy altered their relationships with significant people in their lives, such as their husband, their children and other family members. Women in this study experienced a lack of understanding on the part of others regarding what the diagnosis of twin

pregnancy actually meant to them and what the birth of twins would mean to their lives. As the pregnancy progressed, physical symptoms interfered with the lifestyle the informants had expected to have during the pregnancy.

One informant expressed her difficulty at maintaining her relationship with her husband:

> And just the way the pregnancy has gone where I've been so sick and stuff, changed a lot between me and my husband because we, well, physically and emotionally like I just haven't been able to, I guess, keep him happy either and he was having a tough time of it but now he's finally gotten used to it and accepted that he has to give a little too for these babies . . . (09-1)

Another informant described her private response to her diagnosis, one that was very different from the response she gave to others in public and the effect this had on her relationship with her son:

> When people find out that you're pregnant with twins, well, that's wonderful. It's either wonderful or they laugh, you know, and there is no, even my doctor hasn't sat down with me and said, well, how do you feel about this? . . . I think you initially try to laugh with them and then you go home and have a good cry. I mean, that's what I would do. I would go home and cry and then I would, sometimes it would come out in anger, you know, and I'd have to say sometimes my son wore the brunt of my reactions at the time because I was trying to tell somebody "like this is really frustrating" or it was depressing at the time because I think my emotions were doing the whole scale I just think it came out on somebody whether it was my actions or how I verbally expressed myself at the time. (08-1)

Informants' children were affected in other ways by the pregnancy. In several cases, informants could not lift their children and some limited the amount and type of play they participated in with their children:

> . . . we play together in the morning but you have to be careful not to get her too excited because like any typical three year old once they start getting excited well then they're jumping and running and everything and I can't control her so basically reading stories, knowing exactly when the Elephant Show starts, when Sesame Street starts because although I don't want to use that much television, it's the only way I can entertain her . . . I can barely lift up what I've got. I can't lift her as well. (06-1)

Feelings that they were not understood by family members and others they related to were also expressed by informants:

> Well, then you think, "Oh God, nobody really understands". Like they think you are just so lucky that you're having two and that you're looking good, a little bit of make up and you comb your hair and put some decent clothes on and you look O.K. It doesn't mean you feel O.K. (09-1)

> They [family] can't understand the complications associated with the twin birth. . . . I mean, it's not like they are not supportive and they're not caring. They are and they mean well but they just, I don't know, they just don't seem to understand it all. (02-1)

Although many of the informants expressed frustration and anger because others, including their physicians, did not know what they were feeling, women in this study were reluctant to voluntarily discuss their feelings because of guilt at feeling that way when the pregnancy was apparently progressing well:

> I just think they want to hear all the wonderful things about having the babies. Everybody thinks it's just a wonderful experience and so why tell them something negative. I mean, I think some people probably look at me and go, "Oh! You're just lucky you're having a baby and that it's going to be healthy and you're not having too many problems. . . ". I just laugh. [chuckles] Or I say something and on I go. . . . Well, no it's not wonderful. No. No. . . . You're not going to just sit there with

> everybody and let loose your feelings unless it's somebody you can trust who is going to have a bit of compassion and understanding. (08-1)

Informants were certain that only those who had experienced a twin pregnancy would understand how they felt:

> Because I don't think you know what it feels like until you've been through it. (06-1)

One informant felt that others focused on the condition of pregnancy rather than on her experience as a person once she had been diagnosed as expecting twins. This was interpreted by the informant as a lack of caring:

> . . . it was like the attention was put on the pregnancy and not about anything else. . . . I was just like a womb and it was like, you know, it was like that's it. That's what was the important thing was the pregnancy . . . Like don't you care any more or what? (02-1)

Informants spoke of the pain, fatigue and lack of energy experienced during their pregnancy:

> Nobody understands really the pain that you have. I feel like I'm in pain all the time and I'm not usually one to complain about things. I just feel like I never really feel well. I always feel tired but you still go on with life because you have to but I just feel like I'm always hurting. (09-1)

> What's hard about having twins is living the life I'll refer to as the couch potato because you, there's basically very little you can do. You can't lean forward and you can't sit back and emotionally you rely on everybody around you. (06-1)

All of the informants but one, who had been employed outside of the home during their pregnancy, terminated their employment earlier than they had planned to do with a single pregnancy. For these informants, their social

network was altered much earlier than they had planned initially in the pregnancy. The informant who remained employed until the expected date was able to structure her duties at work and organize her time at home to compensate for her size and fatigue level, therefore maintaining her social network as she had anticipated before being diagnosed with a twin pregnancy.

Relating to Two. Antenatal interviews were structured to allow the informants to freely express their thoughts and feelings regarding their relationship with their unborn twins. The researcher made a conscious effort not to use words such as attachment, connection, bonding or relating during the interviews. In this way, it was hoped that the findings would reflect the mother-unborn twin relationship from the emic perspective without influence of the researcher's use of terminology that might be familiar to the informants. The informants did use these words during interviews, however. The use of the term relating in this section of the findings is used by the researcher because, during coding, it encompassed the words of the informants.

As the twin pregnancy progressed, the informants began to relate to their unborn twins. Relating to two babies assisted women to accept the idea and the reality of a twin pregnancy.

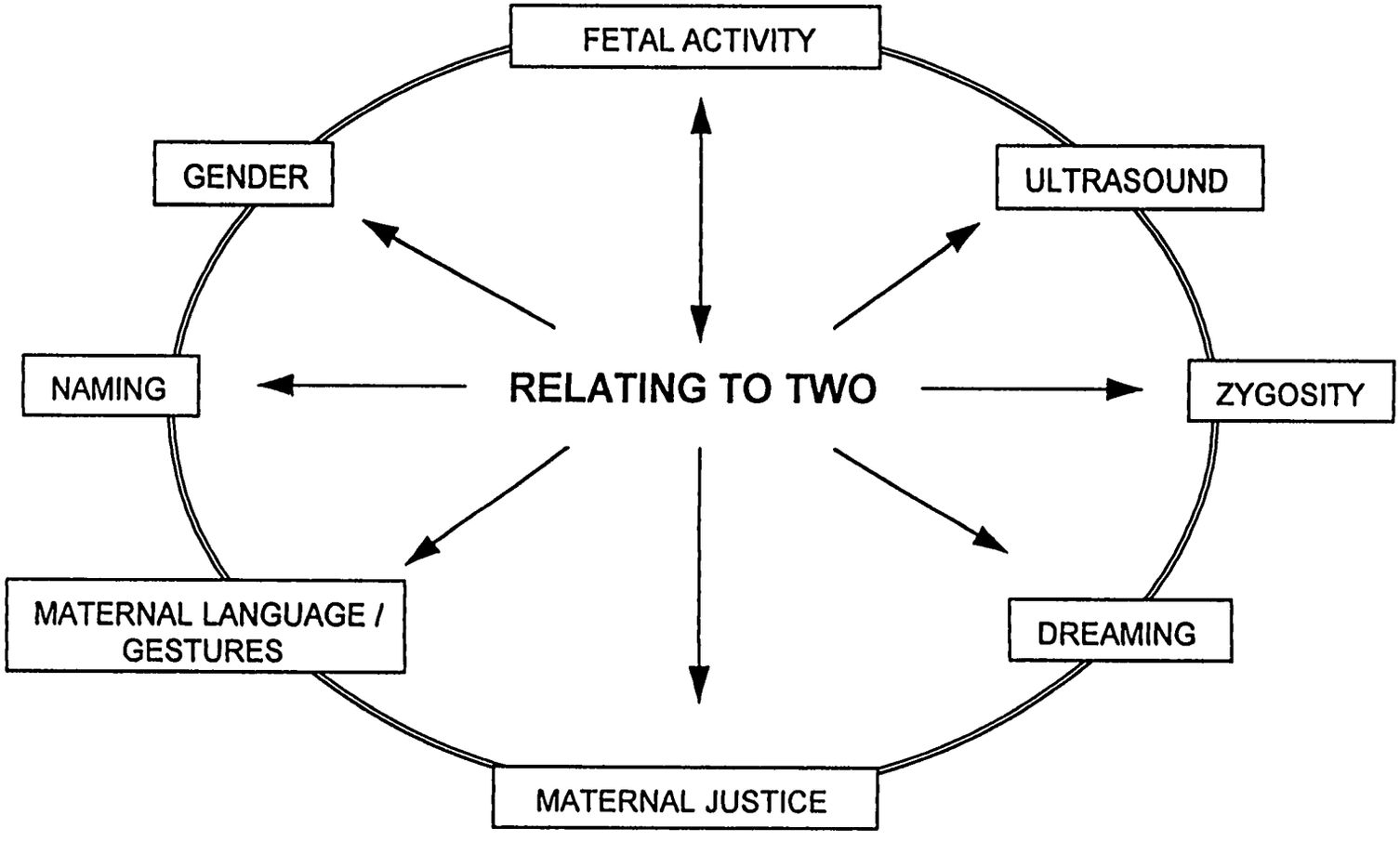


Figure 2. Relating to Two: Maternal Strategies

Women in this study used many and varied strategies to become aware of and acquainted with their unborn twins (see Figure 2). Several of the informants used more than one strategy. Each strategy used by informants carried meaning for them in terms of identifying the infant or some characteristic of the infant. Their association with the unborn twins via these strategies and the knowledge gained from their self education allowed the informants to gauge the progress of their pregnancy. In the following paragraphs, each strategy used by the informants will be reported separately. The specific maternal strategy will be identified in the text in boldface font.

All of the informants related to their unborn twins via their **activity level** in utero. Informants associated activity level with health, therefore, if the baby was active, he/she was healthy or "O.K.":

> The fear, yeah, fear because if it doesn't move for a while, you're thinking whoa, what's wrong? Should I run to the doctor? So you pat your stomach and that and you try, and then it starts moving, O.K., there's no fear. Everything's O.K., you know. . . . Movement means everything is O. K. (06-1)

> They were very, very active because you always attach movement to viability to . . . [tape ends and is turned over] . . . so when you feel movement it's like, yeah, you know, they are healthy. One is related to the other or in my mind it is and so that sort of provides relief, you know. It's like it just makes you feel good . . . (02-1)

> It's just that I know that they're, it's kind of a reminder that they are alive and happy in there. (03-1)

Informants polarized the activity level of the two babies in order to distinguish the infants. Therefore, one infant is described as more active and the other less active. Informants felt they related to a greater degree with the more active twin:

> . . . I always felt more attached to A. and I don't know why and it's not that, it's just I think because he was so much more physically there. (02-1)

> Well, this one has always been more active and I just relate to this one more because I guess he's more active, you know. For some reason, I don't know why, I just do and this one for some reason I worry about sometimes . . . I hope she's just as healthy and she doesn't move as much as this one does. (07-1)

> Because one is very active and the other one isn't. (06-1)

Identifying the activity level of the twins in utero assisted informants both to get to know their babies before they were born and to recognize the reality of their pregnancy:

> Well, it lets you know that this is real because it's hard to just associate, you know, just getting bigger with having a life to deal with later and since they are moving it really brings it home that this is a live, separate person from you. (11-1)

One informant felt that the more active twin more was more real to her:

> . . . cause you could feel him and it was like he was so much more real than the other one. (02-2)

Informants attempted to elicit movement from their unborn twins if they felt the babies were quiet. Because activity was equated with the

twins' health, attempts at making the infants move in utero were made to ensure that the babies remained healthy:

> When I'm worried about them I talk to them or if they're not moving I try to encourage them to wake up and move for Mommy so that I know that they are there still, [chuckles] even though they are moving all the time, if they stop for five minutes it's like what's wrong? What's wrong? (05-1)

> . . . more often than not she was the quiet one so quite often I'd tap that side more to see if she was awake or whatever because B. moved a lot more so you were, [pause] I knew that B. was there whereas with A., it's not that you had to keep reminding yourself but you wanted to make sure everything was O.K. (06-2)

> If they're quiet for a while I'll nudge them to see if they are all right. I probably wake them up or something but as soon as they start moving I feel O.K. (01-1)

One informant differentiated her unborn twins on the basis of physical sensations she experienced as a result of fetal activity:

> I could tell them apart, not really tell them apart but I knew the one was always pushing up in my ribs so I was always aware of that one and the other one didn't really give me much pain, I guess, but yeah, the one was always in my ribs and I was always conscious of that one. (04-2)

Some informants attributed gender to their unborn twins on the basis of fetal activity. However, labelling the babies as male or female did not have a consistent basis:

> . . . because I felt one was more hyper, Twin A, I thought he might be a boy and Twin B has been a lot more subtle and calm might be the girl . . . (01-1)

> . . . the top one is more active and I jokingly say that the top one has to be a girl and takes after me because I just can't sit

> still and the bottom one takes after my husband because he's very laid back and seems to be very comfortable so . . . (11-1)

Some informants attributed personality characteristics to their unborn twins on the basis of activity:

> He's the kind of the bigger, lazier baby is what he always felt like but B., he was always like the feisty, little fiery one. Like he just was. Like you could just tell. His movements were quick and B.'s movements weren't quick. (02-1)

> Well, the one on top is very, very rambunctious and is constantly moving and just a source of energy whereas the other one seems . . . calm so to me they both have two different personalities or physical movements for sure. (08-1)

Some informants used the activity level of the unborn twins as a basis for fantasizing about their uterine activities:

> I think it's just so exciting to try and figure out what's sticking out, a head or a bum or a foot and what position they are in and if they are kicking or punching or playing or if they are playing with one another, I often think well, when they are doing that, sometimes I can just feel them roll. Like are they actually playing with one another or are they just changing positions? Were they sleeping and had a bad dream? (09-1)

Eight primary informants recalled quickening and the circumstances surrounding this event. Two informants could not recall feeling fetal movement for the first time. One of these informants felt that her busy life precluded noting the first movement in her pregnancy (09). The other informant simply could not recall quickening and felt that this was perhaps due to the fact that this was her second pregnancy and she was not as conscious of events during this pregnancy as she had been during her previous one (06).

All of the informants had undergone **ultrasound examination**; most had experienced this several times. Informants related to their babies through the ultrasound images. This examination allowed women in the study to "see" their unborn infants and to determine for themselves that the twins were healthy. In this way, ultrasound examinations assisted the informants to realize the reality of the pregnancy:

> See if they are doing O. K. and I wanted to see them and I guess I just wanted them there you know, you could see them and just make sure everything is all right. (07-2)

> . . . I would get worried because he wasn't active and would really look forward to my ultrasounds just to make sure he was O. K. . . .(11-2)

> . . . the excitement of when she measured them because already at 16 weeks, you know, we could see, like they had fingers and they had legs and you could see spines and so they were really real. Like this was really happening. I was expecting twins. . . . because I go to those ultrasounds and I see them on a regular basis, it has become a reality. Like I know that this is happening. Like I know that there are two. (02-1)

One informant used the ultrasound examination to identify the position of each twin, assisting her to differentiate their activity:

> . . . as I felt the difference, I guess I went to the ultrasound and I saw where they were positioned, that's when I kind of knew which one was more active that the other . . . (01-1)

Five informants were aware of the **gender** of their unborn twins at the time of the first interview. One informant would find out the sex of the twins immediately after her interview with the researcher. Four informants did not

want to know the sex of the twins. Of these four women, only one was multiparous.

Informants who knew the sex of the unborn twins felt this knowledge allowed them to relate to a greater degree with the babies as individuals:

> Just I could relate to them, I don't know how, like as a person. Each, like to A. as a little boy and B. as a little girl type of thing. (03-1)

In addition, knowing the gender of the twins assisted informants towards the reality of the twin pregnancy:

> . . . I found out the sex of the babies and that was probably a really big turning point for me because it was at that time that it all was just like, you know, I'm going to be the mother of two more children. They are going to be boys. . . (02-1)

Knowing the sex of the expected infants restored order in the multiparous informants' lives. They expressed a desire to know the gender of the unborn twins:

> I really, really needed to [know gender]. It was like I had been, there had been enough surprises in my life. (02-1)

> . . . because I want myself fully prepared for their arrival. I mean, it doesn't really matter if they were boys or they were girls but I just, it's just this overwhelming desire to know what sex they are. (08-1)

However, the desire of multiparous women to know the sex of their twins is in contrast to nulliparous informants who did not desire to know the sex of the infants:

> . . . I just think with my first pregnancy I don't want to know because I want to be surprised and I want everyone else to be surprised. . . (04-1)

The only multiparous informant who did not want to know the sex of her expected infants suspected the sex of one baby from viewing an ultrasound:

> I don't know but seeing that has given me the idea that one of them is a boy and I'm kind of disappointed. I sort of wish I hadn't seen that. (06-1)

One informant had been told the zygosity and sex of one of her unborn twins at approximately 29 gestational weeks. After seeking information about identical twins, reading about identical twins and thinking of her unborn babies as boys, the informant was informed at 37 gestational weeks that a mistake had been made. Her twins were fraternal and she was expecting a boy and a girl. She had been given this information the day before her interview with the researcher. The informant, herself an identical twin, felt some confusion during the time of the interview about relating to the infants she now knew to be of differing genders:

> Well, that kind of threw me, that threw me off because I guess I must have been hoping for identical because I'm identical and it made me upset in a way but then made me happy because it was a girl and a boy which will be different. (07-1)

However, throughout the interview this informant referred to the unborn twins as "he" and "she".

Informants related to their unborn twins as individuals once they had knowledge of gender:

> It was individuals ever since we found out the sex. . . . Before it was just the twins. Like they were together and I pictured them both as having the same personalities . . . . I just pictured that

> but now I think, now I picture them as two individual babies and each one as their own person. (03-1)

One informant felt it was also important to know the gender of the expected infants because it assisted her to prepare, not only herself, but her existing children for their birth:

> You know, S. just thought she was having a girl and a boy baby and it was important for all of us to come to terms with the fact that, you know, these are boys . . . (02-1)

Although all of the informants had thought of different **names** they would give their twins when they were born, several had named their expected infants. This occurred after they were informed of the gender of the unborn twins. Naming the twins allowed informants to relate to each baby as an individual and assisted women to differentiate characteristics of the unborn twins such as size and activity level:

> . . . I actually named, had them already named so I would, you know, talk to them individually because I knew they were both boys and so the bigger one was always A. and the smaller one was always B. so I'd find out what position every week, you know, they were in and I mean, they would change around in the time of an ultrasound. (05-2)

For one informant, naming the babies increased her feelings of being prepared for their birth and also allowed her to prepare her present children for the introduction of two infants into the existing household:

> They are going to be boys and then it was so important for me to name these babies and they have names and it was important for S. and T. to be prepared for that. (02-1)

Although not all informants were aware of the **zygosity** of their expected twins, they related to their unborn twins in terms of their whether they were **identical** or **fraternal.** Those informants expecting identical twins tended to think of the infants as a pair with similar characteristics:

> I'd have to say from the time they said to me we think they are identical and the possibilities then were that there was two of the same there . . . (08-1)

Although still acknowledging the fact that they expected a "pair" of babies, women in this study tended to view fraternal twins as separate individuals with differing characteristics:

> More as a pair because I thought they were identical. . . . Now [after finding out the expected twins were fraternal], they will be more individual because they are different. (07-1)

One informant, who was unaware of the zygosity of her expected twins, associated fraternal zygosity with differences and identical zygosity with similarity:

> Sometimes I think about them together and sometimes I think of them separately like especially if they are going to be fraternal I think how different will one look than the other. If they are going to be identical, I wonder how identical. (04-1)

Several of the informants indicated that they related to their unborn twins through **dreams.** Dreams focused on physical characteristics of the infants, the delivery of the infants, and caregiving after delivery:

> I had a couple of dreams about them and I dreamed that I had two little boys with lots of curly hair, very dark hair and they were so cute. (01-1)

> . . . in my dreams I was always having them at home in our room and now when I dream about them it's different things about trying to breastfeed and just caregiving . . . (11-1)

Informants related to their unborn twins through **language,** such as calling the babies by name as noted above. **Physical gestures** such as rubbing or poking the abdomen also were used to attain and maintain contact with their expected infants through the uterine wall:

> I talk to them and I give them hugs silly as that sounds, just try to, you know, try to get to know them . . . (11-1)

> . . . I tell them to settle down and I'll rub my stomach . . . (09-1)

> Sometimes I'll be talking to S. and sometimes it will be to D. and, you know, and sometimes I'll just talk to both of them . . . (02-1)

> . . . I can feel their heads and stuff sometimes and I try to see if I can feel an ear or something out the side . . . (05-1)

Maternal justice described as fairness in relating with each of their unborn twins was an issue expressed by several informants:

> I can remember feeling guilty but I kept feeling that I was always touching this side of my stomach and never this side . . . (02-1)

> I find myself instead of just rubbing my belly with one, there's always one on one side, one on the other. I rub them both. (07-1)

Two informants were concerned about fairness in relating to the twins as a unit versus their present children:

> I'll just have to make sure that I get my time still with G. (09-1)

> I keep picturing myself trying to nurse the twins and trying to share that with my son. Like he needs to have, I can't just leave him alone so like that's my biggest fear. (03-1)

This issue continued to be a concern to several informants at the time of the postpartum interview:

> I always want to treat them equal. I always want to, it's true. If I do talk to one or call them my little honey, I've got to say it to the other one too because I just want them to grow up knowing that I love them both and both the same. (04-2)

Although they used the strategies noted above, two informants indicated at the postpartum interview that they did not relate to their unborn twins. One of these informants felt she was self-absorbed during her pregnancy:

> I didn't [relate to her unborn twins] really, I just was so concerned about myself with this pregnancy that I really didn't. All I did is hope that they would come on time and that they were healthy . . . (09-2)

The other informant had experienced infertility prior to becoming pregnant with the assistance of medical intervention and expressed feelings of disbelief at the pregnancy:

> I don't think I really did actually relate to them. Like I said they were kind of just too unreal. They were, I don't know, unbelievable somehow. (04-2)

Neither of these informants clearly articulated what the word "relate" meant to them. Maternal denial of relating may be a manifestation of self-protective behavior, which is discussed in Chapter 5.

To make room for two babies in their lives, informants used a variety of strategies to relate to their unborn twins. They related to them both as individuals and as a pair, depending on the strategy being employed to make contact with the expected infant(s). Making contact with the twins prior to birth using various strategies allowed informants to begin to view the pregnancy as one that would result in the birth of two infants, the "pair", but also would result in the birth of two individual infants. Thus, these relating strategies assisted the informants towards realizing the twin pregnancy and preparing for the birth of twins. However, this requires time, as one informant noted:

> Sometimes I'll be talking to A. and sometimes it will be to B. and, you know, and sometimes I'll just talk to both of them but I see them as really separate people. . . . Now. Now. Real key issue. Now. It took a long time. (02-1)

Reflecting on What is to Come. As informants make room for two babies in their lives, they reflect on the labor and delivery experience:

> . . . I guess that's the thing that, you know, I sure would like someone to tell me, but again, they can't. It's like I'd like to know exactly what's that like, you know. You deliver one and then you deliver another? Like what must that be like? Like that must be awesome. Like it must be something out of this world. I can't imagine what that would be like. I just cannot. (02-1)

They also reflect on the experience of parenting two infants:

> Basically my main concern right now is, you know, besides labor and the pregnancy, or delivery is the care, you know, the feedings and how will I know what to do . . . (01-1)

Informants expressed uncertainty about the health of the babies:

> That's kind of an immediate thought in my future now is how early are they going to be born, and are they going to be O. K. (04-1)

One informant expressed a fear of pain associated with the delivery of twins:

> Yeah, I guess I'm just scared because of the pain. I know what to expect this time and the doctor said that it might be longer and it might come on stronger because there are two and I'm scared that way. (07-1)

Some informants expressed uncertainty at coping with twin infants:

> I'm not really a high energy level person anyway to begin with and I'm just wondering can I handle it? (04-1)

> Like I try and keep an open mind and think I will get through it but . . . (09-1)

One informant realized the responsibility of parenting during her pregnancy:

> . . . I always wanted to have kids but I don't think being a parent really sunk in like what it would be like and how responsible you'd be for and how dependent that the children are on their parents so while I was pregnant I think all that was starting to play in my mind and just how much work would actually be involved with two babies . . . (11-1)

Some informants expected their life after the birth of twins to be difficult:

> I'm trying to be positive but it's hard sometimes because I know what my life is going to be. I know what it's going to be like. It's not going to be an easy road and people often remind you of that too, not that you don't know that. (08-1)

> Some people offer to help so I'm sure they do know that it's going to be hard but how hard, I don't even know how hard because, I mean, I only have one right now so I really, I know

> that it's going to be tough but I don't know how tough it's going to be. (09-1)

Informants did, however, reach a point where they felt the pregnancy should be over. For one informant, this point was measured by her own comfort level and the perceived health of the unborn twins:

> . . . well, I'm uncomfortable now and I know they are both healthy so I figure it's probably going to be any time and I just want them out. I want to see them. I want to hold them. (07-1)

For another informant, delivery of the twins was desired because the event would restore her own health:

> You just get to a point where you wish it was over. You wish they would come. Everyone says, "Oh! What makes you think it's going to be any better when they are here instead of carrying them?" and I tell them, "Well, I'll have my health back which will make it a little bit better". (09-1)

Reflecting on what is to come assisted informants to acknowledge the upcoming labor and delivery experience which would result in the separation of infants from mother. In addition, their reflections allowed informants to visualize themselves mothering twins. Thus, they accommodated their pregnancy experience to include laboring for and delivering two infants and caring for two infants.

In summary, the process of accommodating encompasses several action/interactional strategies, one of which is making room for two. Here, women in this study changed the plans they had made when they were diagnosed as pregnant and began to accommodate a twin pregnancy into their lives. Informants began to think of the future with two babies in their

lives and physically prepare for the introduction of two babies into their households. In addition, they used a variety of strategies to begin to get to know and to form a relationship with their unborn twins. Making room for two allowed informants to accept the idea of being pregnant with twins and to move toward the reality of a twin pregnancy, the birth of twin infants. This process, however, requires time, as one informant noted:

> . . . it's gradual. I mean gradual as to readjusting to the fact that there's going to be two. It took me a long time to redo this planning, to refix it in my mind so that I was comfortable with it. (02-1)

Appraising Risk

The third action/interactional strategy of the social process of accommodating a twin pregnancy is appraising risk. For eight informants in this study, the diagnosis of twin pregnancy immediately changed the status of their pregnancy into a category designated as high risk (see Appendix J). Two informants experienced pregnancies designated as high risk at the diagnosis of pregnancy due to previous infertility.

Informants reported experiencing various emotions when they were informed of their high risk designation. One informant described feelings of uncertainty regarding her ability to cope with the pregnancy:

> They kept pounding at you, you know, all of these complications and then you start to doubt your body. You start to doubt you a little bit . . . it makes you a little bit more tense. It does. . . . until I deliver those babies and I hold them both in my arms and I see that they are heathy beings, it's like I can't believe that I can do this sometimes. Like I just don't know if I

> can, you know, and that's just how I feel and yet I would have never doubted it with one. (02-1)

Another informant described shock at receiving the information that she was placed in a high risk category:

> But then I was also shocked as well. All of a sudden I was put into a high risk pregnancy. (06-1)

For one informant, fear accompanied the designation of high risk status:

> I don't think the fears are totally always put away. I mean, you're constantly reminded that you are a high risk whether you feel wonderful or whether you don't. (08-1)

One informant had preconceived notions of the meaning of high risk:

> I always thought that a high risk pregnancy was somebody over the age of 40 or has had trouble getting pregnant or has had numerous miscarriages or, like I didn't know but I have a lot of preconceived notions as to what it is. (06-1)

Although informants acknowledged the physician's designation of high risk as a category describing their twin pregnancy status, they did not necessarily view themselves as being high risk. Rather, the women in this study appraised their own risk status on an ongoing basis. This was accomplished via a comparative process, mentally balancing what they knew about pregnancy with what they knew about *this* pregnancy:

> If someone was having problems in the pregnancy which I'm not most definitely other than feeling overweighed and overburdened walking around but a high risk is definitely somebody that's not doing well and their babies aren't doing well and I don't feel that way. (08-1)

Informants used the information they had gathered from books and from visits to their physician to determine the course of events, that is, what

should happen during this pregnancy. Informants compared this with what they felt was actually happening during their pregnancy. If their perception was that their pregnancy was progressing as it should, informants did not feel they fit into the category of high risk.

Assessing the Progression of the Pregnancy. When assessing their own risk, informants utilized a number of strategies. Informants compared their own lifestyle, current gestational age, and present health and weight of the unborn babies with the information they had gathered about pregnancy from books and from their physicians. This assisted them to determine whether the pregnancy was progressing as it should:

> Like I worked right up until 34 weeks and the pregnancy went full term and I never had any feelings of unwellness. I was never ill or overtired or anything like that and from the ultrasounds they were able to tell me that the babies were really good weights and they were both born at really good weights and no complications with either of them so I've never really been sick so I had . . . no reason to think that anything would go wrong. (11-2)

> But my doctor was so good and he just always was checking on everything and I was seeing him weekly. We were getting, like I saw the babies every, almost every other week and so, you know, I was just always up to date on everything. (09-2)

If their pregnancy was progressing as they felt it should, informants continued with their current behaviors, such as eating nutritiously, resting or taking vitamins because they perceived these behaviors as maintaining the course of the pregnancy:

> Unless I had had something major wrong or the babies, if there was something that they said to me this is wrong. You're not

> getting enough of this or there's something wrong with the babies, then I would change what I was doing but since there isn't anything wrong I don't consider what I'm doing now to be inappropriate. (08-1)
>
> . . . just eating well and taking my vitamins and resting, you know. Then when he told me the weights I was just really happy. Like I don't worry about it any more. (07-1)

If informants experienced difficulties with the pregnancy, they perceived that there was greater risk associated with the pregnancy and altered some of their behaviors:

> I was scared to move [following an episode of bleeding]. It's not that I wasn't taking good care of myself before but I took even better care of myself after. Even yard work and things like that I just limited it. I didn't do any of that. I got my husband to vacuum for me and things like that. Just wouldn't lift anybody else's kids or anything because I was too scared. (04-1)

Differentiating this Pregnancy from Another. In addition to assessing the progression of their pregnancy, all multiparous informants compared this pregnancy to others they had experienced to assist them to determine their own personal risk status. Informants differentiated this pregnancy from a previous pregnancy on the basis of physical symptoms:

> I was really sick all the way through my first one. But this one I was sick for the first while but then as it went on it got harder. I didn't swell with D. I swelled with these. It was so much easier to move around with her because I was small with her. I got really big with these ones. (07-2)

Informants also differentiated pregnancies on the basis of emotional experiences:

> I would say that everything just seems so more overwhelming than it did when I was pregnant with my son. I don't remember

> having these overwhelming emotions or responses to things that happened. You know, like everything. . . . I don't think I got so upset and excited in my first pregnancy as compared to now. (08-1)

All of the physical and emotional differences informants identified between this pregnancy and a previous one were viewed as occurring "more" in this pregnancy than previously.

One informant differentiated this pregnancy based upon the changing relationship with her husband:

> Sexual relationships with your husband changed a lot sooner that it does with a single pregnancy. (06-1)

For one informant, complications also became a basis for differentiation:

> I was spotting and that scared me because my first pregnancy had been so, there was never any problems, you know. (06-1)

One informant noted an increase in movement and an inability to carry out tasks with this pregnancy:

> . . . and how hard things are to do and how much movement I have. (09-1)

Some informants described this pregnancy as being "different" but had some difficulty articulating the differences:

> This isn't like for one and it isn't the same. It's different. (02-1)

All of the multiparous women who differentiated this pregnancy from another had previous uncomplicated pregnancies and had delivered healthy single infants. The comparative process of differentiating this pregnancy

from a previous one allowed informants to gauge the progression of this pregnancy and self-determine whether this pregnancy entailed greater risk than their last.

Watching the Calendar. Using information obtained from their physicians and from reading books, informants perceived that the risk inherent in their pregnancy would decrease as the number of gestational weeks increased. Therefore, all informants were conscious of the passage of time during their twin pregnancy. Healthy babies were a consequence of having enough time:

> . . . I felt that if they were given enough time their chances kept increasing about being healthy, about being big enough to handle this so, I mean, time was everything. Like to me that was my biggest hurdle. Like can I give them enough time? Will my body give them enough time? And it's what everything concentrated on was always the time. (02-2)

> It means the chances were less that I would lose it or whatever, that something would go wrong, not that things can't go wrong later but to me it was just all right. The chances of losing it are less and less as I get closer to the end. (04-2)

Informants used personal milestones on the calendar to mark the passage of time. Some informants used days, weeks, months and/or trimesters, while some used doctor's visits to denote time:

> . . . you live from week to week and you never think, it might be easier to think that I have, I did one week rather than I have eight to go. Like always I did one week and that was it and then at the end of that week I did another week. Never I want to have ten more. I want to have, that's long. It was always from week to week and that's how I did it. (02-2)

> I had what I called D-day, delivery day the doctor wanted which is July 14 and I had circled June 2 was upmost in my mind because according to my doctor up until June 2 it would be a very high risk delivery. The babies would be too small. O. K. And then between June 2 and the end of June then if I delivered the babies would still be a little small but they wouldn't be in as much danger. (06-2)

> Well, at first it was the first three months, if I got through that O.K. and then it was the next, you know, the second phase and then I figured, fine. (01-1)

> The longer I remain pregnant the better it is for my babies so now we just do it one week at a time, like more or less one visit at a time although it is very difficult. (06-1)

To ensure that their unborn twins received as much time in utero as possible, informants altered their lifestyle:

> I took the doctor's recommendations. I left work far earlier than I had anticipated to leave work. I left work at 30 weeks and I had anticipated to work all the way up till 38 weeks. I rested every afternoon. I just was careful. You know, I didn't pick up T. I didn't do stupid things. You know, I didn't want to risk it. (02-2)

Informants viewed reaching their personal milestones on the calendar as re-enforcement for the way in which they cared for themselves:

> I think it just made me feel good that I knew I was doing a good job of taking care of myself and eating right and . . . (03-2)

However, reaching milestones relieved one stress for informants but looking ahead to the next date allowed another stress to appear:

> So it's sort of like, one pressure point was relieved but another kicked in. (06-2)

Although each informant had personal milestones, two informants identified 28 to 30 gestational weeks as being critical times:

> . . . as soon as I hit 30 weeks it was a big relief and then when I started to get into 32 and 34 weeks I wasn't worried about that [prematurity] any more. (11-2)

> Just the fact that I had passed that critical time. Twenty eight to thirty weeks. . . . every week that you chalk up it's like all right we did another one and, you know, today was 34 weeks and I knew that if we hang on for another week I can deliver here . . . (02-1)

As gestational age increased and personal milestones were achieved, informants felt more comfortable with and less fearful for the pregnancy:

> Like you started to feel a little bit more comfortable because 28 weeks they are viable but you still don't or I still didn't really completely let go of my detachment at that point because it's like we had a long ways to go and then as each week went on it got a little bit easier and a little bit easier and then after 36 weeks, 35, 36 weeks it's like this is going to happen. They are going to be born. (02-2)

> Actually it was a couple weeks before [36 weeks]. I was getting excited and I started feeling O.K. and then I felt a little more at ease and started feeling more excited about it. (01-2)

However, as gestational age increased, informants worried less about the pregnancy itself and more about the delivery and caring for twins:

> I worried less about them being big enough and then just more about delivering them and you kind of change from one to the other. (02-2)

> Like I was worried about how everything, I was going to cope with everything. It was just a greater amount of that as time, as the time came closer and closer. (08-2)

One informant, who had previously experienced infertility, did not feel she would actually deliver twins until the end of the pregnancy:

> The ninth month. . . . Then I finally felt O.K., but not until then. (01-2)

Most informants were anxious for delivery:

> Really, the last weeks I was just anxious to get it over with. It didn't seem like they would ever get going and come, you know, and they actually didn't so [pause] [I was] just anxious to get them into the world. (11-2)

> I mean, I was prepared. I was ready to go. I wasn't too worried any more. I got past that I think so I was just feeling big and heavy and it was time to get rid of these kids. (05-2)

However, one informant experienced ambivalent feelings about the approaching birth:

> Even though you want them to be born, at the same time you are so afraid of that. Like you kind of want to wait. . . . Because you are still, till they are born and till they are given that O.K. you still fear, you know, is the delivery going to go O.K.? (02-2)

As the pregnancy progressed in gestational weeks, informants perceived their pregnancy risk to be less and their confidence in a positive outcome began to increase. They began to think more about the reality of the approaching birth and less about the pregnancy itself.

Engaging in Protective Behaviors

As a method of coping with the perceived risk of the twin pregnancy and with the twin pregnancy itself, several informants engaged in protective behaviors. They physically protected the twins in utero and also protected themselves mentally and emotionally from what they perceived to be a higher risk of loss during the pregnancy.

Physical Protection of Unborn Twins. Informants protected their twins in utero using a variety of strategies, such as avoiding medications, alcohol and nicotine:

> I always, even if I had a really bad headache I'd always think twice about taking a Tylenol even though I heard it was safe. Things like that I always wanted to protect them. Like I wouldn't do anything to harm them like drink or smoke or anything like that. (04-2)

Other informants were cautious about their activities and nutrition:

> I just keep a watch, you know, if there's kids around that they don't come and run right into me to hurt them or I've been really watching how I eat so that I'm eating the healthy foods as possible so that they get the right nutrition and things like that. (01-1)

> . . . I notice I'm a little more careful just because I'm afraid I might do something that could harm them or harm myself. I haven't ridden my bike because I'm afraid I might fall. Crossing the street, I'm really leery of crossing streets. I'm terrified I might get hit by a car or something like that. (11-1)

> When I sleep at night I sleep on my side and I'll make sure to switch every once in a while just so one doesn't get squished. (07-1)

The use of caution, avoidance of medications and other protective behaviors allowed informants some control over the twins' environment. Informants hoped that protecting the twins before birth would assist in a positive pregnancy outcome:

> That was, I guess, my way of protecting them. . . . Hopefully I would have two healthy babies which I did. (04-2)

Self-protection. Strategies which safeguarded several informants from becoming involved in the pregnancy were used as a coping mechanism in

the event that the pregnancy resulted in loss. Some informants avoided thinking about the pregnancy and the future:

> Most of the time I don't think about the next few weeks. I think about labor a lot but when I think about it, it scares me so I try to take it out of my mind. . . . I usually flip to them being born already. (09-1)

> If I sit down and think about it too much, then I start really getting concerned because I'm going to wonder how I'm going to look after twins. (06-1)

Some informants kept themselves occupied with tasks and therefore did not have time to think about the pregnancy:

> I knew they were there. I knew they had to grow and I just kept myself busy trying not to think about it too much. (03-1)

> I've got to get the walls washed and I've got to clean out my cupboards and I've got to pack and I didn't have time to think about my babies. . . (05-2)

> If I'm very angry I turn the TV on so that way I don't think at all. The days you really don't want to think and you try to reason it through. Like I have to survive until this date. (06-1)

One informant expressed anger and resentment at having to undergo an increased number of ultrasounds. She did not want to be put into a position where she would have to deal with negative results:

> The physical discomfort and as well I don't want to be put in the position where they are going to tell me something that I don't want to know. (06-1)

This informant also found she had much less time to focus thoughts on her pregnancy:

> . . . because there was a little bit of, well, what if something happens because there was a greater chance of something

> happening but I didn't pull out the books and see how big the fetuses of two twins would be at so many weeks. I just . . . I don't think I had time to do it. I was just so tired. (06-2)

Avoiding thoughts about the pregnancy and keeping busy were two strategies used by one informant to make the pregnancy pass more quickly:

> . . . but deep down inside you are worried and so if you don't think too much about the pregnancy maybe it will just go faster and I'm going to reach that 28 weeks that much faster and if you keep really busy with what's going on around you and don't put so much time and energy on the pregnancy cause that's when time goes slowly if all you do is think about the pregnancy. It's just too slow going. It just like takes forever to amount a week and then another week and so I was more detached. I was definitely more detached. It was important, you know, like I wanted everything to go right but I still was more detached, a kind of a self protection thing. Like it was going to protect me or I thought it was going to protect me. (02-1)

She consciously made efforts to ensure that the pregnancy was not the focal point of her life:

> I read lots. I mean, every night I read something about it and about twins and, you know, those things but yet I didn't, I tried to not make it the focal point of my life. . . . I think that I just, I just didn't want to spend all that time and energy on something that might not happen and it just was how I protected myself. . . . (02-1)

For this informant, self protective behaviors began to decrease at about 35-36 gestational weeks. She allowed herself to begin to move toward the pregnancy:

> Thinking more about the pregnancy is what it was. Kind of enjoying it more and relaxing about it more, even though like I didn't physically look nervous or a wreck or anything. Interior. I still felt that not wanting to, not wanting to think about it too much and, you know, because what if something went wrong? Always that fear. (02-2)

If informants perceive the risks of pregnancy to be increased they engage in protective behaviors of the unborn twins and of themselves. Physical protection of the twins in utero continues throughout the pregnancy. Self-protective behaviors are used as a coping strategy by informants throughout the pregnancy. If the perceived risk of pregnancy decreased, as for example with advancing gestational age, informants' use of self-protective behaviors also decreased.

In summary, during the process of accommodating as a result of a diagnosis of twin pregnancy four action/interactional strategies were used by informants: seeking information, making room for two, appraising risk and engaging in protective behaviors. These strategies evolved over the course of the pregnancy and were undertaken in response to the diagnosis of twin pregnancy, therefore were processual and purposeful in nature (Strauss & Corbin, 1990). Action/interactional strategies undertaken in response to a phenomenon have outcomes or consequences which may occur to people, places or things.

Consequences

Consequences may take the form of events or reactive actions/interactions and may be actual outcomes or potential outcomes (Strauss & Corbin, 1990). In this study, the consequences to the informants of accommodating a twin pregnancy were accepting the idea of being

pregnant with twins, experiencing a seesaw of confidence and becoming real.

Accepting the Idea of being Pregnant with Twins

The action/interactional strategies of seeking information and making room for two assisted informants to accept the idea of being pregnant with twins. Visualizing their future with two infants, beginning to relate to two unborn infants and preparing themselves for the birth of two infants allowed informants to more clearly acknowledge that the pregnancy would result in the birth of twins.

For several informants, acceptance of the idea of being pregnant with twins began with "seeing" two unborn infants on ultrasound:

> I think the first time I saw the ultrasound and actually saw them both in there and, you know, to see that there really is two inside of me, you know, and that was about the point when I really truly believed that, yeah, O.K., I guess they are not pulling my leg and it really is true and I'm not just dreaming it and they are not going to say, oh well, I guess we made a mistake the first time and there's just one baby there so . . . (05-2)

> Oh, I think just going for, to actually see the two of them through ultrasounds and seeing that there were actually two things moving around in there. I don't think anything else really helped me . . . (08-2)

Fetal activity coupled with an ultrasound assisted one informant towards acceptance:

> I think probably again the movement, how much stronger it had gotten and the fact that that was probably when I finally accepted that I was having two, that there was definitely two in

> there and until you see it, see them both actually in motion, it's hard to accept and . . . (09-1)

For many informants, time was an important factor in acceptance. They were grateful that they received their twin diagnosis early in the pregnancy so they had more time for accepting:

> Time is a really, is such an important factor. Like I was so glad that I knew early on that I was expecting twins because you work all of this out in your mind and a few times, you know, I'll just cry and I'll just say, you know A. [husband], I don't know if I can do this . . . (02-1)

> . . . for me because I found out so early it was, that time made a big difference in accepting. I think had it happened, you know, two or three months before it would have been a big blow to the idea of what the pregnancy was. (08-2)

> I think I accepted it because I was told so early. I was told at seven weeks and so I had the, you know, almost eight months or whatever to accept it. (04-2)

For some informants, other factors such as discussion, self-talk and reading assisted them towards accepting:

> Other than time. [pause] Just people talking about it, confirming it, talking with my husband about it. (04-2)

> Just, I guess you talk yourself into it. Well, You're having two. You have no choice in the matter . . . (09-1)

> I think I accepted the idea by reading about it. . . . It provided information about everything, just about twinning, you know. How does it happen and again, there's this thing that I have to find out, you know, what could go wrong or what are the indications that something is going to go wrong and just knowing about it. (02-2)

Some informants experienced emotional upheaval during their period of accepting:

> I cried for quite a while. Like it took me a long time, even now I find myself getting like that again because it's so close to having them now and I was really upset but I finally got used to it and the family was really happy. (09-1)

Some informants differentiated between accepting and adjusting, indicating that accepting occurred before birth and adjusting occurred after birth:

> I just think I accepted it and left it at that level. I don't think I wanted to deal with it any more than the fact that I was having twins and here they were and anticipating any more further and deeper into that, to me, was just going to create more feelings that I didn't want to bring out so I don't, for me, I think I had to accept it and then when they were here adjust to it mentally. (08-2)

For one informant, visualization of her future was critical to her acceptance of the twin pregnancy:

> Because when I thought of our family and I thought of three children and A. and that picture no longer existed. When they said we were expecting twins, that picture no longer existed and it was like, it was really hard all of a sudden to picture myself and four children and then as I worked it out, it's like that picture became more clear and as I worked out my own feelings, just kept thinking about it, about how it was going to change us, how it was going to change our lives, just even practical things about who was going to be where and when and how was this all going to fit? And as that in my mind became more and more clear, then so did the twin pregnancy become more and more clear and then after a while the family picture included four . . . (02-2)

Time was again an important factor in this informant's acceptance:

> If you can imagine this family picture of two adults, two kids and those are clear all right. At 16 weeks there would have been two other individuals put there but they would have been barely visible and every time, every ultrasound, every doctor's appointment, every time we heard heartbeats those two little

> pictures got a little bit more visible but they still weren't really part of the whole picture so when they were born, then they were as clear as all the rest. . . . But all of that was necessary for me to say that this is happening. Like I really am pregnant with twins. . . (02-2)

Several informants indicated that complete acceptance of the twin pregnancy did not occur until birth:

> By the time you have the babies you've already accepted, O.K., I'm having twins. (04-2)

> It's not really till they were born, till they were both there in their little bassinet that all of a sudden I was a mother of four and I thought I had accepted it right away, you know, but I didn't. Like it took that long. (02-2)

Three informants reported accepting the idea of twins easily and quickly. One of these informants became pregnant via medical intervention and had hoped a multiple pregnancy would result. One informant felt that she might become pregnant with twins because of her advanced maternal age and her family history of twins. The third informant was an identical twin and had hoped to have twins. All of the remaining informants indicated that acceptance of the twin pregnancy took longer than they had anticipated.

Seesaw of Confidence

The action/interactional strategy of appraising risk influenced informants' confidence levels concerning the pregnancy and the pregnancy outcome. Their level of confidence fluctuated upwards and downwards depending on their perception of their pregnancy risk. As noted previously in

the findings, informants' perception of their risk was closely associated with their assessment of the progression of the pregnancy, previous experiences with pregnancy and advancing gestational age.

Feeling confident was associated with feedback about the pregnancy that informants received from outside sources:

> Because each week that would go by like I'd just wait for my ultrasound to come so that I could see again how they had developed, make sure they were O.K. . . .I just, I couldn't wait. (09-2)

> Had to be those ultrasounds. They and my doctor's appointments, those were just what I kind of lived for. . . . Every ultrasound, we saw they were growing and I would see their organs and it was like wow, you know . . . and it was so immensely a good feeling . . . and then when I would go to Dr. X's, every time, no matter how much I hated those internals it was like you're not dilated or, you know, your blood pressure is excellent and that constant feedback. It was just like so good, so very good for me to feel more confident that yeah, this is going. Like this is happening, without being too over confident. (02-2)

Internal feedback also assisted some informants to become more confident about the pregnancy:

> The way I felt. I felt good through my whole pregnancy basically. . . . I think if I would have felt bad I would have worried more but I always felt quite good. (04-2)

The passage of time and the resulting increase in gestational age allowed informants to become more confident:

> She told me from the beginning I would be in the hospital at 24 or 28 weeks and it just never happened so once I had passed that little block I said to myself, I mean things, I must be doing fine and she said I was and she allowed me to travel and I think that put in my mind that the babies were O.K. (08-2)

> Once I reached Christmas and everything was O.K. and I went in to see my doctor and he said "You're doing fine." And that's what did it . . . (06-2)

For some informants, knowing the approximate weight of the babies was an important factor in increasing confidence levels:

> . . . to know that they were both growing and like that was the big thing in my mind when I'd find out about the ultrasounds is how big are they . . . (05-2)

> . . . they told me last week the approximate weight of the babies just from the measurements and he told me that they are a very good weight for a baby at this stage so I think that that probably made me feel a whole lot better. (09-1)

Several informants were conscious of up-and-down or seesaw feelings of confidence. This was influenced by their perceptions of the progression of the pregnancy and their interpretation of how others perceived the pregnancy:

> Because there were two of them and everybody always told me you don't look seven months pregnant. You don't look six months pregnant. You don't look big at all and I guess that's why. Then I think back to my first one and I was really small and she was a good size and so I didn't worry about it too much and then I would some days and then other days I went, no, everything will be fine . . . (07-1)

> Like even, my physician and my obstetrician and even when I would go for my ultrasounds or whatever, even they all sort off regard it as cautious, you know. Everything appears to be going fine. You know, they are growing fine. I'm sure things will be fine. No guarantees though, you know . . . it was like all of a sudden it was like this is never going to end. Like I'm going to worry about something for the rest of this pregnancy. That's what all of a sudden it felt like. I thought finally I was out of the clear. I mean surely if they are the same size at 25 weeks or 24 weeks surely they, that means that they will continue to be but it wasn't you know, that doesn't mean they will . . . (02-1)

One informant, who felt more confident with the pregnancy as it progressed, was not confident of a positive outcome until after the birth:

> . . . and he was breech so I was, you know, more or less worried about well, if he's breech maybe there is complications and that's more what scared me. Mind you, they had me in a room that was different but that's, I guess that scared me and after I had them I thought everything's good now. (07-2)

In summary, experiencing a seesaw of confidence regarding the pregnancy was an outcome of the informants' perception of their own pregnancy risk. If informants viewed their pregnancy as progressing well their confidence level was increased. If women in this study perceived their pregnancy to be threatened by such things as inappropriate fetal weight or premature labor, their confidence level regarding the pregnancy was decreased. Lack of confidence in the pregnancy was manifested in maternal emotions such as worry and fear and may also be exhibited in self-protective behaviors as noted previously in the findings.

Becoming Real

A final consequence of the action/interactional strategies informants used when accommodating a twin pregnancy was becoming real. Here, the women in this study moved towards the reality of a twin pregnancy.

The action/interactional strategies of making room for two and seeking information allowed informants to focus on their own physical symptoms and also on relating to the unborn twins. In this way, the twin pregnancy became more real to the informants:

> . . . as the pregnancy goes on they become a little more real all the time. Like when you start to show you feel like it's more real and then when you feel them moving, you feel like it's more real and then you grow and you feel, I think actually, yes, as the pregnancy progresses, it's becoming more real. Sometimes they still don't seem real but more real than at first. (04-1)

> Sometimes they still don't seem real to me. You know, I still have to think twins. [laughs] What is all this going to involve? But I don't know. Watching the ultrasounds too and seeing them and seeing their little faces and their ears and just seeing them actually moving, I think, made them real to me. (05-1)

The remaining two action/interactional strategies, appraising risk and engaging in protective behaviors, moved informants away from the reality of the twin pregnancy if the informant perceived her risk to be higher and, in response, engaged in self-protective behaviors.

For one informant who engaged in self-protective behaviors, movement toward the pregnancy began to occur after 28 gestational weeks when she perceived the chances of survival of the twins to be greater:

> Like it wasn't still real and then it became real and then it became, you know, that one was A. and it was like I would say things like, you know, he was making me uncomfortable, like I named him and I says you're really hurting me right now. Like let's move you or B. or it was just I became, I just identified with them. Like I felt more part of it all. Like now like it had really, this was true. Like this is really happening, you know. At least after 28 weeks I knew that their chances of survival were better. If they came before it would be really, really tough going and then you kind of really think yeah, this is happening . . . (02-1)

Another informant, although denying the fact that time was a factor in realizing her twin pregnancy, referred to her unborn twins on several

occasions during the interview as a "baby" and focused solely on her expected date of delivery rather than on her pregnancy:

> They've always been real. Like I've never dwelled on, you know, like I'm five weeks pregnant, six weeks pregnant, seven weeks pregnant. I've only always said my due date is July 14 so on July 14 this baby is going to be born. . . . (06-1)

For several informants, the pregnancy was not real until the birth:

> If you say it enough you believe it but you really don't believe it fully until they are born. Like I knew I was having twins. I knew there was two in there but still until after they were born I think it really took that much for me to totally believe that there were two babies, two little human beings. (09-2)

Movement towards the reality of the twin pregnancy continued until delivery. The birth of twins confirmed the reality of the pregnancy.

Notations regarding Context

As noted previously in this chapter, the context, a set of conditions which influence the action/interactional strategies, is time and maternal emotion. The effect of the passage of time during the pregnancy has been presented concurrently with each individual action/interactional strategy. Maternal emotion, specifically the emotions accompanying the diagnosis of twin pregnancy and the ensuing uncertainty and fear for the pregnancy and delivery, was also presented within each action/interactional strategy. Moreover, it is important to note the relationship between time and maternal emotion. As gestational age advanced, uncertainty and fear remained but the reason for these emotions differed. Initially in the pregnancy, informants were uncertain and fearful about the pregnancy. Later in the pregnancy,

women in this study feared the delivery. Uncertainty was also expressed by informants about their ability to cope with two infants after birth.

An additional noteworthy finding occurred during the interviews themselves. During all of the second interviews, the researcher noted that the voices of the informants had become quieter and more subdued. They tended to take more time to answer questions than they had during the antenatal interview.

Conclusion

In this chapter, the findings of the research study have been presented. The transactional system approach was used to present this grounded theory. Antecedent conditions to the process of accommodating were presented, followed by the action/interactional strategies informants used to accommodate a twin pregnancy. Finally, the consequences of the action/interactional strategies were presented, as were notations concerning the context within which the strategies were used.

CHAPTER V

DISCUSSION

The purpose in this research was to identify, describe and propose a beginning theory of the relationship between a mother and her unborn twins. Women in this study utilized the process of accommodating to manage their twin pregnancy from the time they received the twin pregnancy diagnosis until the time of delivery. They related to their unborn infants within a "complex web of interrelated conditions" (Strauss & Corbin, 1990, p. 161), the transactional system of antecedents, strategies and consequences.

In this chapter, the findings of this research regarding womens' experience of twin pregnancy will be discussed in relation to the current literature. Because of the lack of literature available pertaining to the twin pregnancy experience, literature relating to both a single and a twin pregnancy will be included in this review. Next, propositional statements derived from the findings of this research will be presented. Following this, the implications of the findings for nursing will be discussed. Finally, the chapter will conclude with an examination of the strengths and limitations of this research study and summarizing statements.

Review of the Findings

For women in this study, accommodating has been identified as the basic social process occurring from the time of receiving a twin diagnosis

until the time of birth. Antecedent conditions, such as the diagnosis of pregnancy and suspecting a twin pregnancy, led to the core category of accommodating.

Diagnosis of Pregnancy

All of the informants had received confirmation of pregnancy prior to receiving a diagnosis of twins. Two assumptions were made concerning the informants in this research study. First, the researcher assumed that all of the informants were in the process of transforming to motherhood in an adaptive manner when it was discovered that they expected twin infants (Bergum, 1989; Raphael-Leff, 1991). Transforming is a term used to describe the coexistence of fetus and mother during pregnancy and this, in itself, moves a woman toward motherhood (Bergum, 1989). Second, it was assumed that prior to the diagnosis of twins the informants were progressively mastering the recognized maternal tasks of pregnancy (Campbell & Field, 1989; Leifer, 1977; Rubin, 1975, 1984; Valentine, 1982).

Suspecting a Twin Pregnancy

Half of the informants in this study, both nulliparous and multiparous women, suspected they carried twins prior to receiving a twin diagnosis. Their suspicions were based upon an increase in body size, early fetal activity, dreams and feelings. Self-diagnosis of twin pregnancy causing women to seek confirmation of their suspicions from medical professionals

has been reported by Malmstrom and Malmstrom (1988). These researchers reported that 71.1% of 336 mothers of twins included in their survey indicated a suspicion of a twin pregnancy before medical confirmation. This occurred in both nulliparous and multiparous mothers. Reasons for seeking medical confirmation in those mothers surveyed included an increase in size and/or weight gain, an increase in fetal movement, dreams and separate fetal movement. All of these reasons, except the last, were given by women in this study as reasons for suspecting a twin pregnancy. One informant reported feeling separate fetal movements as suspicious retrospectively once the diagnosis of twins was made (05). In this instance, the informant had not sought confirmation of her suspicions.

Dismissal of womens' suspicions by their physicians is also noted by Malmstrom and Malmstrom (1988). This reaction on the part of physicians when confronted with a woman's suspicion of a twin pregnancy occurred most frequently until after the fifth month of pregnancy. At that time, the physician was reported to be more accepting of the self-diagnostic statements of their patients. One informant in this study reported a similar finding.

Diagnosis of Twin Pregnancy

Intense maternal emotions were described by study informants when they discovered they were pregnant with twins. They experienced feelings such as shock, fear and anger. In addition, they described ambivalent

emotions such as feeling "happy and bewildered" or "thrilled but scared". To date, the experience of discovering a twin pregnancy does not appear to have been described in the research literature. Theroux (1989), however, notes that some women receiving a twin diagnosis are "delighted, but for the most, the news brings shock and surprise" (p. 36), a reaction also recorded by another writer (Linney, 1980). In addition, Theroux (1989) believes that ambivalent feelings about the upcoming birth of twins are not uncommon as women doubt their ability to care for two infants and still continue with their other responsibilities.

The feelings reported by informants in this study when they received their diagnosis of twins are similar to those of women diagnosed as pregnant with a single child. Rubin (1970) believes that a woman experiences an element of surprise when discovering a pregnancy, even though the pregnancy may be desired and planned. These feelings of surprise produce mixed reactions of pleasure and displeasure in the pregnant woman which disappear at the time of quickening. Similarly, surprise, ambivalence and intensification of maternal emotion are described by other writers when discussing a woman's early pregnancy experience (Bergum, 1989; Campbell & Field, 1989; Coleman & Coleman, 1971; Lederman, 1984; Leifer, 1977; Raphael-Leff, 1991; Tilden, 1980; Trad, 1991; Valentine, 1982).

Informants in this study had received a pregnancy diagnosis prior to receiving a diagnosis of twin pregnancy. Prior to reacting to their twin

diagnosis, the women in this study had already reacted to their diagnosis of pregnancy. There may be an additive emotional quality in these two incidences that those pregnant with twins would experience. In addition, there may be qualitative differences in a woman's reaction to the diagnosis of twins because of other factors or concerns in her life, such as support systems, parity or financial considerations. Several of these factors were of concern to informants in this study when they received their twin diagnosis and also have been noted by Theroux (1989) as areas of concern to prospective mothers of twins.

After receiving a twin diagnosis, informants used action/interactional strategies to manage the twin pregnancy. Two strategies, seeking information and making room for two, allowed informants to move towards accepting the twin pregnancy and thus move toward the reality of the twin pregnancy. The remaining two strategies, appraising risk and engaging in protective behaviors, allowed the informants to move toward acceptance and realization if the informant did not perceive her pregnancy risk to be high. Engaging in protective behaviors allowed informants to manage the uncertainty of their twin pregnancy.

Seeking Information

Women expecting a single infant experience an intense desire for information about pregnancy and childbirth once they are diagnosed as pregnant. Information is selected for its relevance to the experience of

childbirth and is considered a means of *ensuring safe passage* for a mother and her infant (Rubin, 1984). Women seek "a loading of knowledge of what to expect, the probable and the possible, and of how to cope with the manifest phenomena" (Rubin, 1984, p. 55). In order to take preventative or avoidance measures to ensure safe passage of their infant, women conduct an intense, personal and extensive literature review related to childbirth, including seeking out other women who may provide experiential information, visiting the physician who assists pregnant women to gauge the normality of their pregnancy and attending prenatal classes or self-help groups (Campbell & Field, 1989; Rubin, 1984).

Women in this study also experienced an intense desire for knowledge. Rather than seeking information about pregnancy, these women desired information about the twin pregnancy experience. Similar to the information sources used by women experiencing a single pregnancy, women pregnant with twins sought information from bookstores, libraries, physicians and local clubs. They were disappointed, however, with the information available in books as most of the information related to a single pregnancy. Several women attended meetings of a local club for women with twins and other multiples and indicated that this interaction was helpful, although stories of womens' experiences with labor, delivery and infant twins did cause the informants some anxiety.

Information about the experience of twin pregnancy assisted women in this study to begin to change plans they had already made for the future. With information about the caretaking of twins they could envision what their future might hold and begin to make room for two babies in their lives.

Making Room for Two

A pregnancy can be divided into three phases, each with its own psychological maternal tasks (Coleman & Coleman, 1971; Raphael-Leff, 1982, 1991). These maternal tasks of pregnancy, developmental and adaptive processes which assist women to progress from being a "woman-without-child" to a "woman-with-child" (Lederman, 1984, p.13), have been noted by several authors. Extrapolated from the literature, the tasks include: accepting the pregnancy, creating an emotional affiliation with the unborn child, recognizing that infant and mother are separate and preparing for a maternal caretaking role (Campbell & Field, 1989; Dickason, Schult & Silverman, 1990; Lederman, 1984; Leifer, 1977; Raphael-Leff, 1982, 1991; Rubin, 1967, 1975, 1984; Stainton, 1985a; Valentine, 1982). The manner in which a prospective mother masters these tasks during pregnancy is thought to be indicative of her later ability to mother a child.

Phase One: Differentiation Of the Pregnancy from the Self

After receiving a diagnosis of pregnancy, a woman focuses on both the psychological aspects of her condition such as her emotional state and the physiological signs and symptoms accompanying pregnancy (Coleman &

Coleman, 1971; Raphael-Leff, 1982, 1991; Rubin, 1975, 1984). Upon receiving a twin diagnosis, informants in this study experienced emotional disequilibrium, as discussed earlier in this chapter. They were, however, keenly aware of their physiological status throughout their pregnancy describing in detail physical signs such as nausea, edema and fatigue. Again, one must question whether the diagnosis of twins in addition to the diagnosis of pregnancy had an additive effect on the emotional and/or physical experiences of women in this study.

In addition to noting physical changes and experiencing emotional lability, a woman in this phase of pregnancy who is expecting a single child begins to reflect upon her relationship with her own mother. This assists a woman to prepare for mothering her own infant (Campbell & Field, 1989; Coleman & Coleman, 1971; Raphael-Leff, 1991; Rubin, 1967; Stainton, 1985a; Valentine, 1982). Informants did not volunteer information regarding their relationship with their mothers, rather they related information about assistance they may have been expecting from their family after the birth of the twins. This may be due to the timing of the interviews, all occurring after the thirty-first week of pregnancy. Had women been interviewed earlier in their pregnancy, the maternal relationship may have been a more focal topic of discussion.

Phase Two: Differentiation of Self from Fetus

This phase of pregnancy begins with *quickening*. There is a shift in maternal focus from the pregnancy to the fetus and the mother begins to *bind-in* to the expected child (Rubin, 1975, 1977). Using such strategies as fantasy, identification and differentiation, a mother expecting a single infant begins to increase her awareness of and become acquainted with her unborn child (Raphael-Leff, 1982, 1991).

All informants used a variety of strategies and in many instances more than one strategy to create an emotional tie with their expected twins. Informants became aware of and acquainted with their unborn twins via: fetal activity, names, gender, dreams, determination of zygosity (identical or fraternal), maternal use of language and/or physical gestures, ultrasound examination and maternal justice. These maternal strategies assisted women to begin to differentiate each unborn twin from the other. Using the above strategies as a basis for polarization and pre-birth differentiation, informants became sensitive to each of their unborn twins and related to them as unique persons, findings similar to those reported by Stainton's (1985b) subjects who were pregnant with a single fetus.

For women expecting a single infant, quickening is a milestone. At this time, women begin to realize that the unborn baby is truly a separate being from themselves and they become more attuned to the fetus than to the physical process of pregnancy itself, a process described by Coleman and

Coleman (1971) and Raphael-Leff (1982, 1991) as differentiation and by Rubin (1975, 1984) as binding-in.

For women in this study, fetal activity was critical for informants. They indicated that the pregnancy became more real with the sensing of fetal movement. With the advent of fetal activity, informants became aware of the unborn twins as separate from themselves and began to recognize the reality of their pregnancy, thus beginning the process of differentiation.

Women expecting twins appear to have an additional task of differentiation. Rather than differentiating themselves from just one infant, they must attempt to sense the presence of two individual unborn infants and differentiate themselves from two unborn infants. The women paid particular attention to fetal activity levels attempting to distinguish one baby from the other, and later, becoming attuned to the separateness of each baby through the use of polarization. They polarized the fetal activity of each twin as different, as "less" or "more" than the other, in order to differentiate the babies and attempt to know them as separate beings. Antenatally, Frazer (1977) reported a similar mode of identification used by her subject, a mother of twins, one where similarities and differences between each twin's activity was noted. In the postpartum period, the use of polarization has been described as a method of recognizing differences in twins which assists mothers in the task of individuation (Anderson & Anderson, 1990). The

findings from this study suggest that the process of individuation for mothers expecting twins begins before birth.

Informants in this study reported relating more to the unborn twin perceived as more active. Similar findings to these were found by Lerum and LoBiondo-Wood (1989) who reported that frequency and degree of fetal movement were related to maternal-fetal attachment when using Cranley's (1981a) MFAS and a pregnancy symptoms checklist with a convenience sample of 80 pregnant women.

Once fetal movement is sensed, pregnant women begin to note and interpret the activity, fantasizing about and attributing characteristics to their unborn child (Coleman & Coleman, 1971; Leifer, 1980; Raphael-Leff, 1982, 1991; Rubin, 1972, 1975, 1984). Mothers have been found to use various interactional styles when interacting with an unborn single child (Stainton, 1990), a finding consistent with the various strategies used by prospective mothers in this study. One mother of twins studied by Frazer (1977) speculated about her unborn babies' actions, assigned sex roles to her unborn babies and projected behavioral characteristics upon them based on their activity levels. Similarly, women in this study attributed gender and personality characteristics to each of their unborn twins on the basis of fetal activity and fantasized about their physical characteristics and physical activity both consciously in interviews with the researcher and unconsciously in their dreams.

Naming of the unborn twins and knowledge of fetal gender assisted informants to realize that theirs was a twin pregnancy and also allowed women to better individualize their babies. Once they were informed of fetal gender, many of the informants chose names for the twins. Some women spoke to each unborn infant by name. For mothers of single infants, knowledge of fetal gender has not been found to enhance postbirth mother-infant interaction when using the use of the baby's name as an indicator (Grace, 1984). No literature was found that addressed this issue in the prebirth period.

Some informants were aware of the zygosity of their unborn twins, that is, whether the babies were identical or fraternal. Those who expected identical twins mentally formed images of similarity while those expecting fraternal twins tended to think of separate individuals with different characteristics. However, mothers expecting identical twins still spoke of "how identical" the infants might be. As differentiation of physical and personality characteristics of twins in the postbirth period has been found to be necessary to relate to them as unique individuals (Anderson & Anderson, 1987, 1990), reflection regarding the effect of zygosity in their unborn twins may have been another strategy used by informants to differentiate their twins in the prebirth period.

Maternal language, such as talking and singing to the fetus, and gestures, such as rubbing or stroking the abdomen, has been described as

part of the intimate and unique relationship a mother has with the child she carries (Bergum, 1989; Carter-Jessop & Keller, 1989). Informants related to both unborn infants in this manner, as well as attempting to elicit movement from the babies if activity had not been sensed recently. This was done to ensure that both babies would move because, to informants, movement was synonymous with health. These perceptions by informants are similar to findings reported by Lever Hense (1989) in her study of women expecting a live child after having had a stillbirth. Lever Hense noted that informants she studied paid particular attention to their perception of fetal movement because it was an indicator of fetal well-being.

Ultrasound examinations were another indicator of fetal well-being for informants in this study. During this examination, they could "see" the unborn infants. In this way, women could determine their "health" and also differentiate the individual position of each twin in utero. Womens' reactions to ultrasound during a single pregnancy indicate that their perception of the fetus changes following the ultrasound visualization. The image of the fetus becomes ". . . brisker, more active, more familiar . . ." (Langer et al., 1988) and allows mothers to more accurately describe their expected child in terms of anatomy, certain character traits such as thumbsucking and well-being (Kohn et al., 1980). In addition, ultrasound contributes to the process of differentiation by allowing mothers to form a personal mental image of the baby that she can elaborate upon through fantasy, thus contributing to the

separation of self and baby (Milne & Rich, 1981) and has been found to be the major source of reassurance for women during the first and second trimesters of a high risk pregnancy (McGeary, 1991). It must be noted, however, that opportunities for reassurance such as an ultrasound may also provide opportunities for a pregnant woman to learn something untoward concerning her expected infant(s). This was noted by one informant in this study (06), who reported disliking the ultrasounds for this reason.

In a postbirth study of twins, maternal justice, "a need to be fair and equal in attention" to both twins was a characteristic of mothers (Anderson & Anderson, 1990, p. 375). Informants expecting twins exhibited maternal justice in both the pre and postbirth periods. Antenatally, women were concerned about being fair to each unborn infant in their actions and words and so were conscious of speaking to each infant and stroking each side of the abdomen. Postbirth, maternal justice was manifested in two distinct ways. First, informants were concerned about fairness in relating to each twin as an individual and attempted to ensure that equal time was spent with each baby, a similar finding to Anderson and Anderson. Second, mothers were concerned about relating to their twins as a unit versus their other children and thus they attempted to ensure that the twins and their other children were given equal portions of maternal time.

Phase Three: Preparing for Birth

The last phase of pregnancy begins when the expectant mother feels the fetus is viable and ends at the time of delivery (Raphael-Leff, 1991). During this phase, a separating-out from the pregnancy occurs (Rubin, 1975) and the focus of the pregnancy shifts from the imaginary infant to the real infant. Mothers expecting a single child prepare physically and emotionally for the upcoming labor and delivery (Coleman & Coleman, 1971; Leifer, 1980).

Women in this study made physical preparations for the birth of two infants, providing them with visual evidence that the pregnancy would result in the birth of two babies. These preparations allowed informants to move toward accepting the idea of being pregnant with twins. Preparing a room for a baby has been described as helpful in assisting prospective mothers to prepare for a major shift in roles (Leifer, 1977). However, Leifer's (1977) findings also indicated that women who viewed the future baby as unreal were less involved in physical preparations during the pregnancy. In this study, informants reported the reality of the twin pregnancy increasing as gestational age increased. In accord with this, only two informants had completed physical preparations for their expected twins at the time of the first interview. All of the informants, however, had made some preparation for the coming infants by the time of birth.

As gestational age increased, informants began to think more about labor, delivery and reflect upon the future caretaking of twins than about the pregnancy itself. Their fears for the pregnancy diminished and they allowed themselves to reflect on the approaching birth. These thoughts are consistent with those of mothers expecting a single child progressing through the maternal task of binding-in during the last trimester of pregnancy (Rubin, 1977).

In summary, when accommodating a twin pregnancy into their lives, women in this study progressed through three pregnancy phases while attempting to master distinct maternal tasks. After receiving a diagnosis of twins, each informant had to make room for two infants rather than one in their lives. During the pregnancy, informants attempted to bind-in to each individual unborn twin, differentiating the twins, polarizing their activity and projecting characteristics based upon maternal perceptions of and interpretations of their fetal activity. Informants also exhibited a concern about relating fairly to the unborn twins. Although informants who had been pregnant previously with a single child insisted that the twin pregnancy experience was "different", they described the use of similar strategies to prepare for the birth of two infants as has been documented as maternal tasks of pregnancy for those women expecting only a single infant.

Appraising Risk

The third strategy used by informants to accommodate a twin pregnancy into their lives was appraising risk. Informants described feelings of shock, disbelief, fear and uncertainty when what was viewed as an uncomplicated pregnancy was designated as a high risk pregnancy due to carrying two unborn infants rather than one. Similar emotions have been described by other high risk pregnant women (Galloway, 1976; Penticuff, 1982; Snyder, 1979; Warrick, 1975). Although informants in this study acknowledged the high risk status of their twin pregnancy as designated by the Alberta Medical Association, they maintained that they did not feel high risk. Women in this study clearly perceived what they felt their risk status to be. This perception determined their behaviors throughout their pregnancy. These findings are similar to those reported by McGeary (1991) who found that informants described themselves as being *at risk* rather than high risk in a study of five high risk pregnant women.

Assessing the Progression of the Pregnancy

Using information from sources such as books and their physician, informants assessed the progression of their pregnancy. They used a comparative process which assisted them to define their own risk, continually comparing what was happening with their pregnancy with what should be happening with a pregnancy. A similar process of assessing has been reported by Corbin (1987) in a grounded theory study of 20 chronically

ill pregnant women. She defines assessing as ". . . defining the risk level in response to information gathered by means of physical, interactional, temporal, and objective cues", and proposes that this strategy was used by women in her study to ". . . exert some control over the potential harm threatening their pregnancy outcome" (Corbin, 1987, p. 320). Corbin notes that having adequate knowledge enabled pregnant women to accurately assess their own risk level. Therefore, the informants' search for knowledge about twin pregnancy is an important aspect of assessing their own pregnancy risk. Due to the lack of resources available about the experience of twin pregnancy, many informants used information about a singleton pregnancy as their gauge for assessment which may not have provided them with a realistic trajectory of pregnancy (Snyder, 1979).

If informants felt that the pregnancy was progressing well, they continued with their current behaviors to maintain the course of the pregnancy. If informants perceived that they were experiencing a greater risk to the pregnancy, they modified their behavior. Informants ceased activities that they enjoyed, did not do household tasks, altered their diet and/or terminated their employment in order to manage their pregnancy. This process, one of *doing things right* (McGeary, 1991), has been noted previously in the literature (Corbin, 1987; Lever Hense, 1989; Penticuff, 1982). This willingness to modify maternal behaviors is closely aligned to two of Rubin's (1975) maternal tasks of pregnancy, *giving of oneself* and

ensuring safe passage. Women in this study desired two healthy babies, and were willing to alter their behavior to ensure that end.

Differentiating this Pregnancy from Another

Snyder (1979) proposes that each woman has a trajectory of childbearing, a perceived model of pregnancy from which she views her own experience. This is formed and influenced by her knowledge level, her past experience and her environment. As a result of these influences, each woman reacts to each pregnancy using her personal trajectory as a basis of comparison.

Women in this study reacted to their twin pregnancy in a similar manner. All of the multiparous informants in this study compared this pregnancy to the previous pregnancies they had experienced. They compared such things as physical symptoms, emotions and complications in order to self-determine if the risk was greater in this pregnancy than the last. Lever Hense (1989) noted that pregnant women who had previously experienced a stillbirth compared their present pregnancy to their previous pregnancy, an occurrence also noted by Warrick (1975) in her discussion of nursing support to high risk women.

Some women in this study described this pregnancy as "different", but had difficulty articulating the meaning of this concept. McGeary's (1991) informants also described their pregnancy in terms of *differentness*, their common expression of being at-risk.

Watching the Calendar

Time dominates the trajectory of childbearing (Snyder, 1979). For informants, the risk inherent in the twin pregnancy decreased as gestational age increased. If the unborn twins had enough time in utero, informants felt that they had a greater chance of delivering two healthy infants. As a consequence of desiring as much time as possible, informants continually assessed the progress of the pregnancy over time to ensure that they were aware of any changes in their pregnancy. Informants altered their lifestyle if necessary with the hope that more time would be the result. Reaching personal milestones that they had established on the calendar provided reinforcement for the way in which mothers were caring for themselves.

Two informants identified 28 to 30 gestational weeks as being critical milestones on the calendar. At this time, they described an ability to relax and feel less worry about the outcome of the pregnancy. This may be the time these women established as the time of viability, heralding the third phase of pregnancy (Raphael-Leff, 1991). With the onset of viability, fears of prematurity began to subside. As gestational age increased, informants began to dwell to a greater degree on the labor and the delivery, a normal manifestation of the maternal tasks of ensuring safe passage and binding-in (Rubin 1975).

Managing the Uncertainty of a Twin Pregnancy

Living with Uncertainty

Managing uncertainty, manifested as fear and worry for the outcome of the pregnancy, was an important task for women in this study. Although Mishel's (1988a, 1988b, 1990) theory of uncertainty has been conceptualized in relation to illness rather than pregnancy, it supports Snyder's (1979) view that women experiencing a high risk pregnancy may lack an internal trajectory of childbearing from which to form perceptions and take actions. Uncertainty occurs when an individual cannot assign value to objects or events and cannot predict outcomes accurately (Mishel, 1988a). A woman pregnant with twins can realistically assess the progress of a single pregnancy but may lack the ability to cognitively categorize a twin pregnancy because of a lack of sufficient cues available in her internal frame of reference.

According to Mishel (1988a), uncertainty in illness may be managed directly or indirectly. Applying Mishel's theory to informants in this study, individuals seen as credible by a pregnant woman, such as a physician or mother who has experienced a twin birth may directly decrease the woman's uncertainty regarding her own pregnancy by assuming power and taking responsibility away from the mother to provide judgement and make valuable recommendations about her situation. Indirectly, the support of a health care provider, a familarity with events expected during the pregnancy and the

availability of information regarding twins may decrease a woman's feelings of uncertainty. All of these factors were mentioned by women in this study as impacting upon their twin pregnancy experience.

Three themes of uncertain motherhood have been identified across several qualitative studies (Marck, Field, & Bergum, in press). They are vulnerability, an inner dialogue with uncertainty and a search for care. Each of these themes has been addressed by informants in this study. Women newly diagnosed with a twin pregnancy expressed feelings of intense emotion and even physical sensations corresponding with the theme of vulnerability. Informants had to recognize that their world had changed. This was described by one informant who had a mental picture of her family that no longer fitted her altered state (02).

The possibility of mothering twins brought an inner dialogue with uncertainty, the second theme. Women in this study imagined their future with two infants instead of one. They experienced a lack of understanding on the part of friends, family and health care professionals about the meaning of this twin pregnancy experience. Informants were ambivalent about their ability to carry twins, yet never would have doubted themselves with a single pregnancy. Protective behaviors of the self and of the baby were also utilized by the women in this study; physical protection to ensure safe passage of the twins and self-protection because safe passage could not be assured.

The third theme, a search for care, was evident in all of the informants. They sought facts from books and physicians and discussed their pregnancy with friends but struggled through the pregnancy with the knowledge that regardless of what experts were telling them, this pregnancy was "different".

Engaging in Protective Behavior

Informants consciously protected their unborn twins from harm. In addition to physically protecting their expected infants, women in this study exhibited behaviors which would protect themselves in the event of a pregnancy loss. Engagement in protective behaviors increased if the informant perceived her pregnancy risk to be increased and decreased if women perceived their pregnancy risk to be lowered.

Physical Protection. Informants in this study physically protected their infants in utero by avoiding substances and activities perceived as harmful to the unborn twins and by paying attention to their own nutritional status. These protective behaviors, similar to doing things right (McGeary, 1991) and protective governing (Corbin, 1986, 1987), can be viewed as methods of ensuring safe passage for their unborn twins (Rubin, 1975). Informants hoped that these protective behaviors would ensure a positive pregnancy outcome, two healthy babies.

Protecting the Self. Self-protective behaviors safeguarded informants from becoming too involved with the pregnancy in the event that safe

passage should not occur. The use of these behaviors, such as avoiding thinking of the pregnancy, keeping occupied with tasks, and focusing on the postbirth caretaking of twins rather than on the pregnancy allowed informants to cope with their uncertainty about the progress of the pregnancy and the ever-present spectre of loss. They ". . . did not want to spend all that time and energy on something that might not happen . . ." (02) and as a result, distanced themselves from involvement in the pregnancy. Informants reported feeling more confident about the pregnancy as gestational age increased (one informant noted this to begin at 35-36 gestational weeks), although some informants were not confident of a positive pregnancy outcome until after the successful birth of the twins.

Self-protective behaviors similar to those reported by informants in this study have been reported by other researchers. Women have utilized protective governing as a strategy of coping when chronically ill (Corbin, 1986, 1987; Strauss & Corbin, 1990) and when infertile (Harris, 1992). McGeary (1991) studied five high risk women who guarded self and baby in response to the perceived uncertainty of their pregnancy situation. Women utilized the strategies of doing things right, seeking reassurance and determining their own involvement in the pregnancy in order to cope with the threat of loss. If the informants perceived their risk to be great, they guarded self and baby. Alternatively, when the perceived risk to the baby

was decreased, mothers lowered their guard and became more involved with the pregnancy.

An example of self-protective behavior was Informant 06, who may be viewed as a negative case. She stated her pregnancy was planned and that she was not surprised she was expecting twins. During the first trimester of the pregnancy, she experienced some complications necessitating a change in activity level. She delayed informing her family and others about her pregnancy, and as she experienced increasing levels of fatigue she terminated her employment earlier that she had anticipated. When discussing the course of her pregnancy she indicated that she disliked the ultrasounds as she did not want to find out anything about the babies that she didn't want to know. She was the only multiparous informant who did not want to know the gender of the expected infants. During the antepartum interview, this informant referred to her expected twins on several occasions as "the baby" and did not seem aware of this as she did not pause, smile, laugh or correct herself when she said this. She also spent much of her time during the day resting and watching television so she "didn't have to think" and concentrated to a great degree on anticipating her next physician's appointment and her date of delivery. She restricted her physical activities and attended all physician's appointments (McGeary's, 1991, strategies of doing things right and seeking reassurance) but appeared to limit any other

involvement with the pregnancy. Her actions were interpreted as the manifestation of a high degree of unconscious self-protective behavior.

Marck, Field, and Bergum (in press) noted that a perceived lack of support by vulnerable women may increase their feelings of uncertainty during pregnancy. Women in this study discussed their perceptions of support given by physicians during pregnancy and delivery, by nurses during the intra and postpartum experience, and by family members. Most informants felt that their pregnancy experience was misunderstood by others and indicated that no one could understand the enormity of the twin pregnancy experience unless they had experienced it themselves. In accord with Marck, Field, and Bergum's theories, a perceived lack of support from various sources left informants feeling fearful and uncertain about their experience and about their ability to cope with the task of mothering two infants. One informant described her lack of support from health care professionals:

> I don't think I got very much emotional support from anybody and you were just another person having a baby. . . . I would have liked somebody to maybe have had a group sit down and have a little talk dealing with pregnancy of twins and coping and all the aspects of every day living with twins or just your feelings about being pregnant with twins because it is so much different than a single pregnancy, so some kind of support system there for people, whether it be through your doctor or through a community service group or something like that, but I know my own doctor as much as I like her never offered any, you know, support other than me having to ask for is there any group in town? Is there a twins club? I mean, this had to be pulled from people in most cases and just searching out information on twins was really done at my own ideas. I mean nobody else sort of I

> know I can deal with one baby but two it's just that much more frightening. (08-2)

Two consequences to informants of accommodating a twin pregnancy were accepting the idea of being pregnant with twins and becoming real.

Accepting the Twin Pregnancy

Accepting the idea of being pregnant with twins is one consequence of the strategies utilized by women in this study to accommodate the pregnancy into their lives. Seven informants reported feeling greater acceptance of the idea of twins as the pregnancy progressed. The exceptions were one informant who had hoped for twins when undergoing a medical intervention to become pregnant (01), one informant, an identical twin herself, who had hoped to conceive twins (07) and one informant who indicated that she was not surprised at conceiving twins due to her age and family history (06).

Accepting a pregnancy is normally considered to be a maternal task of pregnancy, one that is resolved in the first phase of pregnancy (Coleman & Coleman, 1971; Raphael-Leff, 1991; Rubin, 1984). The delaying of acceptance experienced by most women in this study may have been associated with two factors. First, informants had received a diagnosis of pregnancy and then had to readjust to a twin diagnosis. They had to change their view of their pregnancy and readjust many plans they had made for their future to incorporate two babies instead of one into their lives. Informants reported that this process required time, possibly more time than

the incorporation of the expected single child. Second, when incorporating a pregnancy, women reflect upon the costs and benefits inherent in the pregnancy. The women in this study may not have had a clearly perceived satisfaction in the knowledge that they would be caring for two infants rather than one until later in their pregnancy (Lederman, 1984).

The informants' realization of the twin pregnancy over time is congruent, however, with the findings of a qualitative study of 30 low risk women. Lumley (1980, 1982) reported that 70% of women interviewed in the first trimester reported unreality associated with pregnancy. This number decreased to 37% in the second trimester of pregnancy and to 8% in the third. Informants felt the pregnancy became more real as gestational age progressed. Differentiation and individualization of the unborn twins assisted informants in this task. For women in this study, the twin pregnancy was confirmed at the time of delivery when two infants were born.

Propositional Statements

Propositional statements derived from the findings of this study are:

1. During a twin pregnancy, women differentiate themselves from two unborn infants.
2. Women pregnant with twins utilize fetal activity levels as a basis for differentiation.
3. Prebirth differentiation of twins is assisted through the use of polarization of fetal activity levels.

4. Women experiencing a twin pregnancy attempt to individualize their expected infants during the prebirth period. Individualization is assisted through knowledge of fetal gender, naming of the expected infants, and awareness of their zygosity (identical or fraternal).

5. Women are concerned with fairness and equalness in attention to their individual twins during both the prebirth and postbirth periods.

6. Women are concerned with fairness and equalness in attention to their twins as a unit and to other children during the early postbirth period.

7. There is a lack of information available for women experiencing a twin pregnancy.

8. Women pregnant with twins progress through the recognized phases and maternal tasks of pregnancy. Although progression through the phases and tasks of pregnancy is determined by each woman's individual pregnancy situation, mastering maternal tasks during a twin pregnancy requires more work on the part of the pregnant woman as she must complete the tasks in relation to a pregnancy with two unborn infants rather than one.

9. Women pregnant with twins appraise their own pregnancy risk status on an ongoing basis.

10. Women experiencing a twin pregnancy use protective behaviors. Behaviors designed to physically protect the unborn twins allow women control over the uterine environment. Women physically protect their unborn twins throughout the pregnancy. If women perceive their pregnancy risk to

be high, they utilize self protective behaviors as a coping mechanism to safeguard their involvement in the pregnancy, should a loss occur.

11. As gestational age progresses, women move towards the realization they are pregnant with two unborn infants. This realization is assisted by preparations women make for the birth of two infants, relating to two unborn infants, physically preparing for the introduction of two infants into the home, and mentally preparing for the delivery of two infants.

Nursing Implications

The findings of this research study have implications for nursing in the areas of education, clinical practice and further research.

Education

Women in this study indicated a lack of resources available to them regarding the twin pregnancy experience. Information available at physicians' offices, such as pamphlets and/or booklets related to the twin pregnancy experience and pertinent community agencies would meet the newly diagnosed woman's immediate need for information.

Prenatally, sessions specific to those women expecting twins would provide an opportunity for nurses to educate women regarding the twin pregnancy experience. Acknowledging budgetary concerns, these sessions may be included as an adjunct to a session of prenatal classes for singleton pregnancies. Ideally, separate programs designed exclusively for women experiencing a twin pregnancy would meet the need expressed by women in

this study for information that was pertinent to their unique pregnancy experience. Through attendance at programs designed in this manner, women newly diagnosed with a twin pregnancy could interact with others who are pregnant with twins, express their feelings about their experience, receive education regarding the physiological and psychological aspects of the twin pregnancy experience and become aware of further assistance available in their community. Specifically, sessions should include information regarding adaptation to the twin pregnancy experience, such as increased nutritional requirements of twin pregnancy, lifestyle and activity changes, increased risk of complications and the emotional aspects of expecting two infants rather than one. In addition, the labor and delivery of twins, Caesarean sections, feeding of twins, time management and coping skills need to be addressed. Nurses should take every available opportunity to provide education to these mothers, as women themselves have indicated the importance of information to the experience of twin pregnancy.

Clinical Practice

Because of the recent increase in numbers of women expecting and delivering twins, nurses practicing in hospital and community settings must become aware of the unique needs of these women. Provision of information to women newly diagnosed with twins regarding the twin pregnancy experience, such as nutritional requirements, possible activity restrictions and signs of complications, would assist women to gain knowledge

concerning a twin pregnancy. Nurses can assess their social support systems and also provide information regarding community agencies that may assist these women. A nurse can also assist these prospective mothers by acknowledging the differentness of the entire twin pregnancy experience from that of a singleton. A sensitivity to the pregnant woman's feelings and fears will assist her to cope with the changes in her expectations for her future. Nurses may have a role in the provision of immediate feedback to pregnant women regarding tests which indicate fetal well-being, such as an ultrasound, but must be aware that all women may not find these examinations reassuring.

Labor and delivery may not be approached with excitement by women pregnant with twins. They may be ambivalent, fear their ability to cope with the delivery of twins and subsequent mothering of two infants. An awareness of the possible existence of feelings such as these, an acceptance of the individual woman's fears and an ability to reassure women that these feelings are normal are nursing qualities that will assist the woman through her ante and intrapartum experience. Nurses must also be aware that the full realization of the twin pregnancy may not occur until after the delivery. The nurse can assist the mother at this time by allowing her to see the twins together as soon as possible after birth. This will enable women to further differentiate the infants and therefore promote the postpartum task of individuation of twins.

Women who have delivered twins must be treated by nurses as unique individuals who have experienced a unique pregnancy. Thus, they may require more assistance in the early postpartum period to overcome their uncertainty and doubt regarding their ability to mother two infants. Providing reassurance, encouragement and anticipatory guidance regarding feeding of two infants, physically caring for two infants, time management, and coping strategies for self and family will assist women who have recently delivered twins to assume the responsibilities and caretaking of two infants.

Nursing Research

From the point of view of women in this study, a lack of information is available which would assist them to cope with their twin pregnancy. Little literature appears to be currently available about the experience of being pregnant with twins. An assessment of the needs of the woman pregnant with twins would be of value in assisting nurses to identify areas of concern from the perspective of those experiencing the pregnancy.

A study designed to follow mothers from the diagnosis of twins to birth would increase the present knowledge base regarding twin pregnancy and would gather the data throughout the entire pregnancy experience rather than retrospectively and currently as this study has done. A study designed in such a manner would provide a means of comparison with the entire

singleton pregnancy experience and also may replicate the findings of this research study.

Further research into the area of mother-unborn twin relating would be of value to increase the existing body of knowledge about prebirth attachment. Suggested areas for research about the mother-unborn twin relationship include the effect of zygosity (knowledge of identical versus fraternal), the effect of knowledge of gender, the effect of parity and the effect of the occurrence of the twin diagnosis (early versus later) in pregnancy. Cultural variations in mother-unborn twin relating may also be a researchable factor. Additional information about twin pregnancy from the father's perspective would assist nurses to provide individualized care for the entire family system.

Replication of this study with particular attention to the effect of uncertainty and the process of risk appraisal in another high risk group would increase the research available regarding vulnerable mothers. Further study of homogeneous high risk groups of pregnant women would be of value to further define the experience of high risk pregnancy, the role of information in the experience of pregnancy and the phenomena of the mother-fetus relationship during pregnancy.

Strengths and Limitations

Informants were selected for this study using the purposive sampling method, therefore women were selected based upon their ability to provide

information necessary to formulate a theory about the experience of twin pregnancy. This sampling method strengthened the study, as informants were selected who could provide detailed data relevant to the research questions.

The informants in this study were diverse in terms of age, income and parity providing variation in their contributions to the theory development. However, they represented a lower middle to upper class population and were homogeneous in terms of ethnic background; all informants were Caucasian.

The researcher's knowledge of and experience with twin pregnancy further strengthened this study. This provided theoretical sensitivity when interviewing, coding and analyzing data and formulating the theory. Interviews of informants were conducted during the pregnancy, another strength of this study as this scheduling allowed informants to dwell on their current experience. The postpartum interview, although a valuable opportunity to verify and further develop the theory, may have limited the study as women tended to focus on their current caretaking role rather than on their pregnancy.

To further strengthen the design of this study, multiple interviews could be conducted from the time of the twin diagnosis until birth and also during the early postpartum experience. In this way, the early pregnancy experience would be captured as it unfolded, not retrospectively.

As the researcher was referred a number of prospective informants nearing delivery within a short time period, it was not possible to completely code data between each interview, therefore a lack of theoretical sampling limited this study. The researcher did, however, review each interview and identify themes before attending the next interview. In this way, one interview provided guidance for the conduct of the following interview.

Conclusion

In this chapter, the process of accommodating a twin pregnancy into a woman's life has been discussed in relation to the current literature available regarding both a twin and a singleton pregnancy. Propositional statements derived from the findings were presented and implications for nursing education, clinical practice and research were discussed. Finally, the strengths and limitations of this research were examined. It is hoped that this grounded theory conceptualizing a woman's experience of becoming a mother to twins will provide a trajectory of childbearing for women expecting twins, will provide the impetus for further research into the area of the mother-unborn twin relationship and will assist nurses in the provision of care to women and their families who experience a twin pregnancy.

References

Abbink, C., Dorsel, S., Flores, J. E., Meyners, J. E., & Walker, C. J. (1982). Bonding as perceived by mothers of twins. Pediatric Nursing, 8(6), 411-413.

Ainsworth, M. S. (1969). Object relations, dependency, and attachment: A theoretical review of the infant-mother relationship. Child Development, 40, 969-1025.

Ainsworth, M. S. (1973). The development of infant-mother attachment. In B. Caldwell and H. Ricciuti (Eds.), Review of Child Development Research Volume 3: Child Development and Social Policy (pp. 1-95). Chicago IL: University of Chicago.

Ainsworth, M. S., & Bell, S. (1970). Attachment, exploration, and separation: Illustrated by the behavior of one-year-olds in a strange situation. Child Development, 41, 49-67.

Anderson, A., & Anderson, B. (1987). Mothers' beginning relationship with twins. Birth, 14(2), 94-98.

Anderson, A., & Anderson, B. (1990). Toward a substantive theory of mother-twin attachment. Maternal-Child Nursing, 15(6), 373-377.

Avant, K. (1979). Nursing diagnosis: Maternal attachment. Advances in Nursing Science, 2(1), 45-56.

Avant, K. P. (1982). A maternal assessment strategy. In S. S. Humenick (Ed.), Analysis of current assessment strategies in the health care of young children and childbearing families (pp. 171-178). Norwalk, CT: Appleton-Century-Crofts.

Barnard, K. E., Hammond, M., Booth, C., Bee, H., Mitchell, K., & Spieker, S. (1989). Measurement and meaning of parent-child interaction. In F. J. Morrison, C. Lord, & D. Keating (Eds.), Applied developmental psychology: Vol. 3 Psychological development in infancy (pp. 39-80). Toronto, ON: Academic

Bergum, V. (1989). Woman to mother: A transformation. Granby, MA: Bergin & Harvey.

Bibring, G. L., Dwyer, T. F., Huntington, D. S., & Valenstein, A. F. (1961). A study of the psychological processes in pregnancy and of the earliest mother-child relationship. The Psychoanalytic Study of the Child, 16, 9-72.

Bowlby, J. (1958). The nature of the child's tie to his mother. International Journal of Psychoanalysis, 39, 350-373.

Bowlby, J. (1969). Attachment and loss: Volume 1 attachment. Harmondsworth, England: Penguin.

Bowlby, J. (1977). The making and breaking of affectional bonds. British Journal of Psychiatry, 130, 201-210.

Brazelton, T. B., & Cramer, B. (1990). The earliest relationship. New York: Addison-Wesley.

Brazelton, T. B., Kozlowski, B., & Main, M. (1974). The origins of reciprocity: The early mother-infant interaction. In M. Lewis & L. Rosenblum (Eds.), The effect of the infant on its caregiver (pp. 49-76). Toronto, ON: Wiley.

Bretherton, I. (1985). Attachment theory: Retrospect and prospect. In I. Bretherton & E. Waters (Eds.), Growing points of attachment: Theory and research (pp.3-35). Chicago, IL: University of Chicago Press.

Campbell, I. E., & Field, P. A. (1989). Common psychological concerns experienced by parents during pregnancy. Canada's Mental Health, 37(1), 2-5.

Campbell, S., Reading, A. E., Cox, D. N., Sledmere, C. M., Mooney, R., Chudleigh, P., Beedle, J., & Ruddick, H. (1982). Ultrasound scanning in pregnancy: The short-term psychological effects of early real-time scans. Journal of Psychosomatic Obstetrics and Gynaecology, 1(2), 57-61.

Campbell, S. B. G., & Taylor, P. (1979). Bonding and attachment: Theoretical issues. Seminars in Perinatology, 3(1), 3-13.

Carson, K., & Virden, S. (1984). Can prenatal teaching promote maternal attachment? Practicing nurses test Carter-Jessop's prenatal intervention. Health Care for Women International, 5, 355-369.

Carter-Jessop, L. (1981). Promoting maternal attachment through prenatal intervention. Maternal-Child Nursing, 6(2), 106-112.

Carter-Jessop, L., & Keller, B. (1989). Early maternal bonding. In Thomas R. Verny (Ed.), Pre- and perinatal psychology (pp. 107-127). New York: Human Sciences.

Chenitz, W. C., & Swanson, J. (1986). From practice to grounded theory. Don Mills, ON: Addison-Wesley.

Chess, S., & Thomas, A. (1982). Infant bonding: Mystique and reality. American Journal of Orthopsychiatry, 52(2), 213-222.

Coleman, A. D., & Coleman, L. L. (1971). Pregnancy: The psychological experience. New York: Herder & Herder.

Coleman, A. D., & Coleman, L. (1973/74). Pregnancy as an altered state of consciousness. Birth and the Family Journal, 1(1), 7-11.

Condon, J.T., & Esuvaranathan, V. (1990). The influence of parity on the experience of pregnancy: A comparison of first- and second-time expectant couples. British Journal of Medical Psychology, 63, 369-377.

Corbin, J. M., (1986). Coding, writing memos, and diagramming. In W. C. Chenitz & J. M. Swanson (Eds.), From practice to grounded theory (pp. 102-120). Menlo Park, CA: Addison Wesley.

Corbin, J. M. (1987). Womens perceptions and management of a pregnancy complicated by chronic illness. Health Care for Women International, 8, 317-337.

Corter, C. (1982, May). Parenting, prematurity, and multiple birth. Paper presented at the University of Waterloo Child Development Conference, Toronto, ON.

Cranley, M. S. (1981a). Development of a tool for the measurement of maternal attachment during pregnancy. Nursing Research, 30(5), 281-284.

Cranley, M. S. (1981b). Roots of attachment: The relationship of parents with their unborn. Birth Defects: Original Article Series, 17(6), 59-83.

Cranley, M. (1992). A response to "a critical review of prenatal attachment research". Scholarly Inquiry for Nursing Practice, 6(1), 23-26.

Croft, C. (1982). Lamaze childbirth education: Implications for maternal-infant attachment. Journal of Obstetric, Gynaecologic, and Neonatal Nursing, 11(5), 333-336.

Curry, M. (1987). Maternal behavior of hospitalized pregnant women. Journal of Psychosomatic Obstetrics and Gynaecology, 7, 165-182.

Davis, M. S., & Akridge, K. M. (1987). The effect of promoting intrauterine attachment in primiparas on postdelivery attachment. Journal of Obstetric, Gynaecologic, and Neonatal Nursing, 16(6), 430-437.

Dickason, E. J., Schult, M., & Silverman, B. L. (1990). Maternal-infant nursing care. Toronto, ON: Mosby.

Dickerson, P. S. (1981). Early postpartum separation and maternal attachment to twins. Journal of Obstetric, Gynaecologic, and Neonatal Nursing, 10(2), 120-123.

Elliott, M. R. (1983). Maternal-infant bonding: Taking stock. Canadian Nurse, 79(8), 28-31.

Field, P. A., & Morse, J. (1985). Nursing research: The application of qualitative approaches. London, England: Croom Helm.

Frazer, E. B. (1977). The work of a multigravida in becoming the mother of twins. Maternal-Child Nursing Journal, 6(2), 87-105.

Funke, J., & Irby, M. (1978). An instrument to assess the quality of maternal behavior. Journal of Obstetric, Gynaecologic, and Neonatal Nursing, 7(5), 19-22.

Gaffney, K. F. (1986). Maternal-fetal attachment in relation to self-concept and anxiety. Maternal-Child Nursing Journal, 15(1), 91-101.

Gaffney, K. F. (1988). Prenatal maternal attachment. Image: Journal of Nursing Scholarship, 20(2), 106-109.

Galloway, K. G. (1976). The uncertainty and stress of high risk pregnancy. American Journal of Maternal Child Nursing, 1(5), 294-299.

Glaser, B. (1978). Theoretical sensitivity. San Francisco, CA: Mill Valley.

Glaser, B., & Strauss, A. (1967). The discovery of grounded theory: Strategies for qualitative research. New York: de Gruyter.

Goldberg, S. (1983). Parent-infant bonding: Another look. Child Development, 54, 1355-1382.

Goldberg, S., Perotta, M., Minde, K., & Corter, C. (1986). Maternal behavior and attachment in low-birth-weight twins and singletons. Child Development, 57, 34-46.

Goshen-Gottstein, E. R. (1980). The mothering of twins, triplets and quadruplets. Psychiatry, 43, 189-204.

Grace, J. T. (1984). Does a mother's knowledge of fetal gender affect attachment? Maternal-Child Nursing, 9(1), 42-45.

Grace, J. T. (1989). Development of maternal-fetal attachment during pregnancy. Nursing Research, 38(4), 228-232.

Gromada, K. (1981). Maternal-infants attachment: The first step toward individualizing twins. Maternal-Child Nursing Journal, 6(2), 129-134.

Grossman, K. E., & Grossman, K. (1990). The wider concept of attachment in cross-cultural research. Human Development, 33, 31-47.

Guba, E. G., & Lincoln, Y. S. (1981). Effective evaluation. San Francisco, CA: Jossey-Bass.

Harris, R. (1992). Pregnology: The process of getting pregnant through science. Unpublished master's thesis, University of Alberta, Edmonton, Alberta.

Heidrich, S. M., & Cranley, M. S. (1989). Effect of fetal movement, ultrasound scans, and amniocentesis on maternal-fetal attachment. Nursing Research, 38(2), 81-84.

Herbert, M., Sluckin, W., & Sluckin, A. (1982). Mother to infant 'bonding'. Journal of Child Psychology and Psychiatry, 23(3), 205-221.

Kemp V. H., & Page, C. K. (1987). Maternal prenatal attachment in normal and high-risk pregnancies. Journal of Obstetric, Gynaecologic, and Neonatal Nursing, 16(3), 179-184.

Kennell, J. H., & Klaus, M. (1984). Mother-infant bonding: Weighing the evidence. Developmental Review, 4, 275-282.

Klaus, M., & Kennell, J. (1976). Maternal-infant bonding. St. Louis, MO: Mosby.

Klaus, M., & Kennell, J. (1982). Parent-infant bonding. St. Louis, MO: Mosby.

Kohn, C. L., Nelson, A., & Weiner, S. (1980). Gravidas' responses to realtime ultrasound fetal image. Journal of Obstetric, Gynaecologic, and Neonatal Nursing, 9(2), 77-80.

Koniak-Griffin, D. (1988). The relationship between social support, self-esteem, and maternal-fetal attachment in adolescents. Research in Nursing and Health, 11(4), 269-278.

Kreftig, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. American Journal of Occupational Therapy, 45 (3), 214-222.

Lamb, M. (1982). Early contact and maternal-infant bonding: One decade later. Pediatrics, 70(5), 763-768.

Lamb, M. E., & Hwang, C. (1982). Maternal attachment and mother-neonate bonding: A critical review. In M. Lamb & A. Brown (Eds.), Advances in Developmental Psychology Volume 2 (pp. 1-39). Hillsdale, NJ: Erlbaum.

Langer, M., Ringler, M., & Reinold, E. (1988). Psychological effects of ultrasound examinations: Changes of body perception and child image in pregnancy. Journal of Psychosomatic Obstetrics and Gynaecology, 8(3), 199-208.

LeCompte, M. D., & Goetz, J. P. (1982). Problems of reliability and validity in ethnographic research. Review of Educational Research, 52, 31-60.

Lederman, R. P. (1984). Psychosocial adaptation in pregnancy. Englewood Cliffs, NJ: Prentice-Hall.

Leifer, M. (1977). Psychological changes accompanying pregnancy and motherhood. Genetic Psychological Monographs, 95, 57-96.

Leifer, M. (1980). Psychological effects of motherhood: A study of first pregnancy. New York: Praeger.

Leonard, L. G. (1981). Postpartum depression and mothers of infant twins. Maternal-Child Nursing Journal, 10(2), 99-109.

Lerum, C. W., & LoBiondo-Wood, G. (1989). The relationship of maternal age, quickening, and physical symptoms of pregnancy to the development of maternal-fetal attachment. Birth, 16(1), 13-17.

Lever Hense, E. A. (1989). Livebirth following stillbirth: Maternal processes. Unpublished master's thesis, University of Alberta, Edmonton, Alberta.

Linney, J. (1980). The emotional and social aspects of having twins. Nursing Times, 76(7), 276-279.

LoBiondo-Wood, G. (1985). The progression of physical symptoms in pregnancy and the development of maternal-fetal attachment. Dissertation Abstracts International, 46, 2625B. (University Microfilms No. 85-21973).

Lumley, J. (1980). The image of the fetus in the first trimester. Birth and the Family Journal, 7(1), 5-14.

Lumley, J. (1982). Attitudes to the fetus among primigravidae. Australian Paediatric Journal, 18(2), 106-109.

Malmstrom, P. E. M., & Malmstrom, E. J. (1988). Maternal recognition of twin pregnancy. Acta Geneticae Medicae et Gemellologiae (Roma), 37(2), 187-192.

Malmstrom, P. M., & Biale, R. (1990). An agenda for meeting the special needs of multiple birth families. Acta Geneticae Medicae et Gemellologiae (Roma), 39(4), 507-514.

Marck, P., Field, P. A., & Bergum, V. (in press). Motherhood when the outcome is uncertain. Newbury Park, CA: Sage.

McGeary, K. (1991). Connecting in a high-risk pregnancy. Unpublished master's thesis, University of Alberta, Edmonton, Alberta.

Mercer, R. T., Ferketich, S., May, S., DeJoseph, J., & Sollid, D. (1988). Further exploration of maternal and paternal fetal attachment. Research in Nursing and Health, 11(2), 83-95.

Mikhail, M. S., Freda, M. S., Merkatz, R. B., Polizzotto, R., Mazloom, E., & Merkatz, I. R. (1991). The effect of fetal movement counting on maternal attachment to fetus. American Journal of Obstetrics and Gynaecology, 165(4), 988-991.

Miller, W., Wahera, S., & Nimrod, C. (1992). Multiple births: Trends and patterns in Canada, 1974-1990. Health Report, 4(3), 223-250.

Milne, L. S., & Rich, O. (1981). Cognitive and affective aspects of the responses of pregnant women to sonography. Maternal-Child Nursing Journal, 10(1), 15-39.

Mishel, M. H. (1988a). Uncertainty in illness. Image: Journal of Nursing Scholarship, 20(4), 225-232.

Mishel, M. H. (1988b). Finding meaning: Antecedents of uncertainty in illness. Nursing Research, 37(2), 98-103.

Mishel, M. H. (1990). Reconceptualization of the uncertainty in illness theory. Image: Journal of Nursing Scholarship, 22(4), 256-262

Morgan, L. J. (1981). Methodological review of research on mother-infant bonding. Advances in Behavioral Pediatrics, 2, 17-31.

Morse, J. (1989). Strategies for sampling. In J. Morse (Ed.), Qualitative nursing research: A contemporary dialogue (pp. 117-132). Rockville, MD: Aspen.

Muller, M. (1989). The development and testing of the Muller prenatal attachment inventory. Dissertation Abstracts International, 50, 3404B. (University Microfilms No. 89-26411).

Muller, M. (1992). A critical review of prenatal attachment research. Scholarly Inquiry for Nursing Practice, 6(1), 5-22.

Muller, M. (1993). Development of the prenatal attachment inventory. Western Journal of Nursing Research, 15(2), 199-215.

Myers, B. (1984). Mother-infant bonding: The status of this critical-period hypothesis. Developmental Review, 4, 240-270.

Nelson, S. (1985). Attachment theory. Nurse Practitioner, 10(8), 34-36.

Pascoe, J. M., & French, J. (1989). Development of positive feelings in primiparous mothers toward their normal newborns. Clinical Pediatrics, 28(10), 452-456.

Penticuff, J. H. (1982). Psychologic implications in high-risk pregnancy. Nursing Clinics of North America, 17(1), 69-78.

Raphael-Leff, J. (1982). Psychotherapeutic needs of mothers-to-be. Journal of Child Psychotherapy, 8, 3-13.

Raphael-Leff, J. (1991). Psychological processes of childbearing. London, England: Chapman & Hall.

Reading, A. E., Cox, D. N., Sledmere, C. M., & Campbell, S. (1984). Psychological changes over the course of pregnancy: A study of attitudes toward the fetus/neonate. Health Psychology, 3(3), 211-221.

Reiser, S. (1981). A tool to facilitate mother-infant attachment. Journal of Obstetric, Gynaecologic, and Neonatal Nursing, 10(4), 294-297.

Rhone, M. (1980). Six steps to better bonding. Canadian Nurse, 76(9), 38-43.

Rubin, R. (1967). Attainment of the maternal role part I processes. Nursing Research, 16(3), 237-245.

Rubin, R. (1970). Cognitive style in pregnancy. American Journal of Nursing, 70(3), 502-508.

Rubin, R. (1972). Fantasy and object constancy in maternal relationships. Maternal-Child Nursing Journal, 1, 101-111.

Rubin, R. (1975). Maternal tasks in pregnancy. Maternal-Child Nursing Journal, 4(3), 143-153.

Rubin, R. (1977). Binding-in in the postpartum period. Maternal Child Nursing Journal, 6(2), 67-75.

Rubin, R. (1984). Maternal identity and the maternal experience. New York: Springer.

Sandelowski, M. (1986). The problem of rigor in qualitative research. Advances in Nursing Science, 8(3), 27-37.

Showers, J., & McCleery, J. (1984). Research on twins: Implications for parenting. Child: Care, Health and Development, 10(6), 391-404.

Simms, L. (1981). The grounded theory approach in nursing research. Nursing Research, 30(6), 356-359.

Snyder, D. J. (1979). The high-risk mother viewed in relation to a holistic model of the childbearing experience. Journal of Obstetric, Gynaecologic, and Neonatal Nursing, 8(3), 164-170.

Sroufe, L. A., & Waters, E. (1977). Attachment as an organizational construct. Child Development, 48, 1184-1199.

Stainton, M. C. (1985a). Origins of attachment: Culture and cue sensitivity. Unpublished doctoral dissertation. San Francisco, CA: University of California.

Stainton, M. C. (1985b). The fetus: A growing member of the family. Family Relations, 34(3), 321-326.

Stainton, M. C. (1986). Parent-infant bonding: A process, not an event. Dimensions in Health Service, 63(3), 19-20.

Stainton, M. C. (1990). Parents' awareness of their unborn infant in the third trimester. Birth, 17(2), 92-96.

Stern, P. N. (1980). Grounded theory methodology: Its uses and processes. Image: Journal of Nursing Scholarship, 12(1), 20-23.

Stern, P.N., Allen, L.M., & Moxley, P.A. (1982). The nurse as grounded theorist: History process and uses. Review Journal of Philosophy and Social Science, 7, 200-215.

Strauss, A., & Corbin, J. (1990). Basics of qualitative research. Newbury Park, CA: Sage.

Svejda, M. J., Pannabecker, B. J., & Emde, R. N. (1982). Parent-to-infant attachment: A critique of the early "bonding" model. In R. N. Emde & R. J. Hormon (Eds.), The development of attachment and affiliative systems (pp. 83-93). New York: Plenum.

Terry, G. E. (1975). The separation-individuation process in same-sex twins: A review of the literature. Maternal-Child Nursing Journal, 4 (2), 121-129.

Theroux, R. (1989). Multiple birth: A unique parenting experience. Journal of Perinatal and Neonatal Nursing, 3(1), 35-45.

Tilden, V. (1980). A developmental conceptual framework for the maturational crisis of pregnancy. Western Journal of Nursing Research, 2(4), 667-679.

Trad, P. V. (1991). Adaptation to developmental transformations during the various phases of motherhood. Journal of the American Academy of Psychoanalysis, 19(3), 403-421.

Tulman, L. J. (1981). Theories of maternal attachment. Advances in Nursing Science, 3(4), 7-14.

Turrini, P. (1980). Psychological crises in normal pregnancy. In B. Blum (Ed.), Psychological aspects of pregnancy, birthing, and bonding (pp. 133-150). New York: Human Sciences.

Valentine, D. (1982). The experience of pregnancy: A developmental process. Family Relations, 31(2), 243-248.

Vito, K. O. (1986) The development of maternal-fetal attachment and the association of selected variables. Dissertation Abstracts International, 47, 998B. (University Microfilms No. 86-09661).

Warrick, L. H. (1975). An aspect of perinatal nursing: Support to the high-risk mother. In ANA Clinical Sessions American Nursing Association (pp. 351-358). San Francisco CA: Appleton-Century-Crofts.

Watkins, K. (1987). Parent-child attachment: A guide to research. New York: Garland.

Watson, E. (1991). Bonding and attachment: Myth or reality? Professional Care of Mother and Child, 1(1), 9-11.

Williams, T. M., Joy, L. A., Travis, L., Gotowiec, A., Blum-Steele, M., Ailen, L. S., Painter, S. L., & Davidson, S. (1987). Transition to motherhood: A longitudinal study. Infant Mental Health Journal, 8(3), 251-265.

Wu, J., & Eichmann, M. (1988). Fetal sex identification and prenatal bonding. Psychological Reports, 63(1), 199-202.

Zeanah, C. H., Carr, S., & Wolk, S. (1990). Fetal movements and the imagined baby of pregnancy: Are they related? Journal of Reproductive and Infant Psychology, 8(1), 23-36.

APPENDIX A

Information Letter A for Potential Informants from Physician's Office

Research Study Title: An Exploration of a Mother's Relationship with her Unborn Twins

Researcher: Jeanne Van der Zalm
Master of Nursing Candidate, Faculty of Nursing
University of Alberta
Phone: XXX-XXXX

Supervisor: Dr. P.A. Field
Professor, Faculty of Nursing
University of Alberta
Phone: XXX-XXXX

Are you between 6 and 7 months pregnant and expecting twins?

Are you interested in volunteering to participate in a research study?

I am a nurse and a mother of two sets of twins. I am doing a research study to learn more about mothers and their unborn twins. I would like to talk to you about the study to find out if you might be interested in this study.

The purpose of this study is to learn how a woman pregnant with twins gets to know her babies before they are born.

Pregnant women who agree to be involved in this study will be asked to talk about their experiences of getting to know their unborn twins. It will be like an informal discussion. These discussions will take place twice, once before the babies are born and once after they are born, when the babies are around 6 weeks old. Each discussion will take about one hour. The discussions will take place in your home (or another suitable location) at a time convenient to you.

If you are interested in being in this study, please fill out the attached sheet and give it to the nurse. I will call you. We can talk further about the study. After I have explained the study to you, you can decide if you would like to be a part of this study.

* *

Permission to Call:

I, _____(please print), give my permission to Jeanne Van der Zalm to call me at the telephone number listed below and at the time of day indicated, in order to give my information about the study "An Exploration of a Mother's Relationship with her Unborn Twins".

Signature: _____

Telephone Number: _____

Time of day: _____

APPENDIX B

Information Letter B for Potential Informants from Twin and Triplet Club and Advertisement

Research Study Title: An Exploration of a Mother's Relationship with her Unborn Twins

Researcher: Jeanne Van der Zalm
Master of Nursing Candidate, Faculty of Nursing
University of Alberta
Phone: XXX-XXXX

Supervisor: Dr. P.A. Field
Professor, Faculty of Nursing
University of Alberta
Phone: XXX-XXXX

Are you between 6 and 7 months pregnant and expecting twins?

Are you interested in volunteering to participate in a research study?

I am a nurse and a mother of two sets of twins. I am doing a research study to learn more about mothers and their unborn twins. I would like to talk to you about the study to find out if you might be interested in this study.

The purpose of this study is to learn how a woman pregnant with twins gets to know her babies before they are born.

Pregnant women who agree to be involved in this study will be asked to talk abut their experiences of getting to know their unborn twins. It will be like an informal discussion. These discussions will take place twice, once before the babies are born and once after they are born, when the babies are around 6 weeks old. Each discussion will take about one hour. The discussions will take place in your home (or another suitable location) at a time convenient to you.

If you are interested in being in this study, please call me at XXX-XXXX (this is not long distance from Edmonton). We can talk further about the study. After I have explained the study to you, you can decide if you would like to be a part of this study.

APPENDIX C

Newspaper Advertisement for Informants

Women Pregnant with Twins

A Master of Nursing student from the University of Alberta is studying how women get to know their unborn twins. If you are over 23 weeks pregnant with twins, I would like to talk to you about my research study. Please call XXX-XXXX for more information. (This is not a long distance number from Edmonton).

APPENDIX D

Biographical Data

To help me to understand my findings, I would like you to provide me with some additional information. If there are questions that you do not want to answer, please let me know. All information is confidential. This information will be included in the final report, but it will be done so that you cannot be identified.

How old are you?____

What is your marital status?_____

What is/was your occupation?_____

What is the highest level of education you have obtained?

_____below high school
_____high school
_____college/technical school
_____university-- how many years_____
highest degree_____

What is the current yearly level of income in your family?

_____less than $19,999
_____$20,000 to $29,999
_____$30,000 to $39,999
_____$40,000 to $49,999
_____greater than $50,000

How many times have you been pregnant?_____

How many children do you have living with you at home now?_____

Is this your first set of twins?_____

What date are these babies due?_____

How many weeks pregnant are you now?_____

Have you had any complications with previous pregnancies? If so, what kind?_____

Was this pregnancy planned?_____or unplanned?_____

Do you know the sex of the babies? yes _____ no _____

APPENDIX E

Questions to Guide Interviews

Antepartum Interview

1. Tell me about this pregnancy.
2. How did it feel to be told you were expecting twins?
3. What sort of thoughts do you have about your babies?
4. Do you tend to think about them as individuals or as a pair?
5. Do you believe you need to take more care of yourself because you are expecting twins?

Postpartum Interview

1. Tell me about what happened in the pregnancy between the last time we talked and the delivery.
2. What sort of thoughts did you have about your babies during the later part of your pregnancy?
3. What sort of thoughts did you have about the delivery during the later part of your pregnancy?

APPENDIX F

Informed Consent: Primary Informants

Research Study Title: An Exploration of a Mother's Relationship with her Unborn Twins

Researcher: Jeanne Van der Zalm
Master of Nursing Candidate, Faculty of Nursing
University of Alberta
Phone: XXX-XXXX

Supervisor: Dr. P.A. Field
Professor, Faculty of Nursing
University of Alberta
Phone: XXX-XXXX

Purpose of the Study: The purpose of this study is to learn about the relationship a mother has with her unborn twins.

Procedure: Women pregnant with twins will be asked if they want to be a part of this study.

In this study, you will be asked to talk about your experience of getting to know your unborn twins. These conversations will last about 1-1 1/2 hours. Meetings will take place once before the babies are born, after the 28th week of pregnancy and once when the babies are about 6 weeks old. The total time involved in the study will be about 3 hours. The talks will take place in your home at a time convenient to you. If another place other than your home is better for a meeting, then a different place will be arranged for the meeting. The talks will be tape-recorded and a written record of them will be made.

Participation: There are no known health risks resulting from being in this study. Results from this study may help improve the care that nurses give to women and families expecting twins.

Voluntary Participation: I want you to know that you do not have to be in this study. If you decide to be in the study, you can drop out at any time by just letting me know. If you heard about the study at your doctor's office and you decide not to be in the study or you decide to drop out of the study, your care will not change.

Confidentiality: Your name will not appear in this study. A number will be assigned to your written record instead of your name. Your name will be erased from the audio tapes. Your name, code number and data will be kept in a locked drawer. The tapes will be destroyed seven years after the study is finished. The typed interview and notes will remain in a locked file. These may be used for another study in the future, if the researcher gets approval from an ethical review committee.

The information and findings of this study may be published or presented at conferences, but your name or any material that might identify you will not be used. If you have any questions or concerns about this study at any time, you can contact me or my supervisor at the given telephone numbers.

Consent: I acknowledge that the above research procedures have been described. I am satisfied with the answers I have received to my questions. I know that I may contact the person named below if I have any questions either now or in the future. I understand the benefits of participating in this study. I have been told that all records in this study that relate to me will be kept confidential. I give my permission to the person conducting this study to review my file in my physician's office. I understand that I am free to withdraw from this study at any time. I also understand if I do not want to be in this study or drop out of this study that my nursing care will not change. I understand that if any information about abuse of someone under 18 years of age is disclosed by me during the study, the person conducting this study is under legal obligation to report it to the proper authority.

Participant's Statement:

I, _____, have read this information and agree to be in the study called "An Exploration of a Mother's Relationship with her Unborn Twins". I have received a copy of this consent form to keep.

_____ _____
(signature of participant) (date)

_____ _____
(signature of researcher) (date)

IF YOU WISH TO RECEIVE A SUMMARY OF THE STUDY WHEN IT IS FINISHED, PLEASE COMPLETE THE FOLLOWING:

Name:_____

Address:_____

APPENDIX G

Informed Consent: Secondary Informants

Research Study Title: An Exploration of a Mother's Relationship with her Unborn Twins

Researcher: Jeanne Van der Zalm
Master of Nursing Candidate, Faculty of Nursing
University of Alberta
Phone: XXX-XXXX

Supervisor: Dr. P.A. Field
Professor, Faculty of Nursing
University of Alberta
Phone: XXX-XXXX

Purpose of the Study: The purpose of this study is to learn about the relationship a mother has with her unborn twins.

Procedure: Women pregnant with twins will be asked if they want to be a part of this study.

In this study, you will be asked to talk about your experience of getting to know your unborn twins. You will have one conversation with the person doing the study for the purpose of confirming information obtained from interviews done with mothers who are 28 or more weeks pregnant with twins. This conversation will last about one to one and one half hours. The talk will take place in your home at a time convenient to you. If another place other than your home is better for a meeting, then a different place will be arranged for the meeting. The talks will be tape-recorded and a written record of them will be made.

Participation: There are no known health risks resulting from being in this study. Results from this study may help improve the care that nurses give to women and families expecting twins.

Voluntary Participation: I want you to know that you do not have to be in this study. If you decide to be in the study, you can drop out at any time by just letting me know. If you heard about the study at your doctor's office and you decide not to be in the study or you decide to drop out of the study, your care will not change.

Confidentiality: Your name will not appear in this study. A number will be assigned to your written record instead of your name. Your name will be erased from the audio tapes. Your name, code number and data will be kept in a locked drawer. The tapes will be destroyed seven years after the study is finished. The typed interview and notes will remain in a locked file. These may be used for another study in the future, if the researcher gets approval from an ethical review committee.

The information and findings of this study may be published or presented at conferences, but your name or any material that might identify you will not be used. If you have any questions or concerns about this study at any time, you can contact me or my supervisor at the given telephone numbers.

Consent: I acknowledge that the above research procedures have been described. I am satisfied with the answers I have received to my questions. I know that I may contact the person named below if I have any questions either now or in the future. I understand the benefits of participating in this study. I have been told that all records in this study that relate to me will be kept confidential. If I found out about this study at my doctor's office, I give my permission to the person conducting this study to review my file in my doctor's office. I understand that I am free to withdraw from this study at any time. I also understand if I do not want to be in this study or drop out of this study that my nursing care will not change. I understand that if any information about abuse of someone under 18 years of age is disclosed by me during the study, the person conducting this study is under legal obligation to report it to the proper authority.

Participant's Statement:

I, _____, have read this information and agree to be in the study called "An Exploration of a Mother's Relationship with her Unborn Twins". I have received a copy of this consent form to keep.

_____ _____

(signature of participant) (date)

_____ _____

(signature of researcher) (date)

IF YOU WISH TO RECEIVE A SUMMARY OF THE STUDY WHEN IT IS FINISHED, PLEASE COMPLETE THE FOLLOWING:

Name:_____

Address:_____

APPENDIX H

Characteristics of Primary Informants

	Age	Marital Status	Education	Occupation
01	25	Married	High School	Hair Stylist
02	29	Married	University	Teacher
03	30	Married	College/Technical School	Mother
04	28	Married	High School	Cook
05	27	Married	College/Technical School	Housekeeper
06	36	Married	Some University	Expeditor
07	24	Stable Relationship	College/Technical School	Office Manager
08	32	Married	College/Technical School	Homemaker
09	29	Married	High School	Data Operations
11	28	Married	University	Dental Assistant

APPENDIX I

Characteristics of Secondary Informants

Subject	Age	Marital Status	Education	Occupation	Age of Twins
Susan	24	Married	College	Nurse	7 months
Sandra	31	Married	High School	Horticulturist	4 years

APPENDIX J

High Risk Scoring by Alberta Medical Association

Adapted from:

ALBERTA PRENATAL RECORD

THIS RECORD IS PREPARED AND REVISED BY THE REPRODUCTIVE CARE COMMITTEE OF THE ALBERTA MEDICAL ASSOCIATION. PRINTED AND DISTRIBUTED TO THE HOSPITALS BY ALBERTA HEALTH.

7. PRE-PREGNANCY - PART A		SCORE
Age ≤ 17 at delivery	1	
Age ≥ 35 at delivery	2	
Obesity (≥ 91 Kg)	1	
Height (≤ 152 cm)	1	
Smoker - anytime during pregnancy	1	
DIABETES		
Controlled by diet only	1	
Insulin used	3	
Retinopathy documented	3	
HEART DISEASE		
Asymptomatic (no affect on daily living)	1	
symptomatic (affects daily living)	3	
HYPERTENSION		
140/90 or greater	2	
Hypertensive Drugs	3	
CHRONIC RENAL DISEASE DOCUMENTED	2	
OTHER medical disorders eg. epilepsy	1	
severe asthma, lupus, Crohn's disease		
Subtotal "A"		

PAST OBSTETRICAL HISTORY - PART B		SCORE
Neonatal death	3	
Stillbirth	3	
Abortion between 12 to 20 weeks		
and under 500 grams birth weight	1	
Delivery at 20 - <37	1	
Cesarean Section	2	
Small for dates	1	
Large for dates	1	
RH ISOIMMUNIZATION - Unaffected infant	1	
- Affected infant	3	
Major cong. anomaly eg. Downs, Heart	1	
CNS defects		
Subtotal "B"		

11. PROBLEMS IN CURRENT PREGNANCY - PART C				L&D ASSESSMENT
SCORE		1st Visit	36 Wk.	
2	Diagnosis of large for dates			
3	Diagnosis of small for dates			
2	Polyhydramnios or oligohydramnios			
3	Multiple pregnancy			
3	Malpresentations			
2	Membranes ruptured before 37 weeks			
1	Bleeding 0 - 20 weeks			
3	Bleeding 20 - 40 weeks			
2	Pregnancy Induced Hypertension			
1	Proteinuria ≥ 1 +			
1	Gestational diabetes documented			
3	Blood antibodies (Rh, Anti C, Anti K, etc.)			
1	Anaemia (< 100 g per L)			
1	Pregnancy ≥ 42 weeks			
1	Poor weight gain (26 - 36 weeks < ½ Kg/week) OR weight loss			
	Subtotal "C"			

* Total Score:

A+B+C Initial Visit _____

A+B+C 36 Weeks _____

A+B+C L & D _____

* Low Risk = 0 - 2
High Risk = 3 - 6
EXTREME Risk = ≥ 7