

WOMEN AND RISK-TAKING: THE OVERLOOKED DIMENSION

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## ABSTRACT

This research was based on the premise that psychological research on risk-taking behaviour has emphasized a one-dimensional model of instrumentality and cognitive functioning derived from male experience. The central research question "How do women experience risk-taking?" was investigated by analyzing definitions and examples of personal risk described by 44 women, and by comparing relationships between subgroups assigned by occupation and by sex-role orientation. The findings indicated that women experienced risk-taking that spanned both dimensions of affiliation (connection to others) and instrumentality (attainment of personal goals). A new definition of risk-taking was proposed that incorporated elements of uncertainty, emotional involvement, loss, and a process of change. Women in traditional occupations described a similar number of affiliative and instrumental risks, while women in non-traditional occupations emphasized instrumental risks. It was observed that the opportunity and demand for risk-taking appeared related to social context and work activity. Significant differences were also found between women in traditional and non-traditional occupations with respect to sex-role orientation (from the Bem Sex-Role Inventory), employment status, income level, and number of children. No differences were found between sub-groups designated by occupation and by sex-role orientation with respect to estimates of risk-taking tendency from a self-estimate scale

and the Choice Dilemmas Questionnaire. The results supported a critique of the Choice Dilemmas Questionnaire, citing an emphasis on instrumental and hypothetical risk-taking. Participants also reported that the CDQ was not relevant to their lives. The feminist approach encouraged active participation and evaluation by the women in the study. As a result, participants reported an increased understanding of themselves and of the process of risk-taking.

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## Chapter I.

### INTRODUCTION

This research project addresses the question of how women define and experience risk-taking in their lives. It is assumed that the phenomenon of risk-taking is an essential element in the survival and growth of both women and men. Central to this question is a concern that psychological research on risk-taking behaviour has focused predominantly on the behaviour of men and has overlooked aspects of risk-taking that may be relevant to women.

The phenomenon of risk-taking has been a topic of considerable research since the 1950s. In a recent review of the literature on individual differences in risk-taking behaviour, Sweeney (1985) suggested that the majority of studies fall into three major categories:

1. Studies that investigate the relationship between achievement motivation and risk-taking (Atkinson, 1957; McLelland, 1961; McLelland & Watson, 1973; Touhey & Villemez, 1975).

2. Studies that link risk-taking with personality traits and/or cognitive structures (Aurich, 1976; Jellison & Riskind, 1970; Keinan, Meir, & Gome-Nemirovsky, 1984; Kogan & Wallach, 1964).

3. Studies that compare differences between individual and group risk-taking (Higbee, 1970; Kogan & Wallach, 1967; Newman, 1975; Stoner, 1961; Teger & Pruitt, 1967).

Sweeney (1985) found the majority of these studies to be limited in their relevance to women's experience in that they were generally laboratory studies demanding responses to hypothetical situations or performance in chance or skill activities. The studies produced controlled results, but "at the expense of breadth or relationship to real life and the lives of women in particular" (p. 45). Sweeney observed that the researchers were exclusively men and that the samples were predominantly all-male, undergraduate college students. She concluded that "little work has been done on risk-taking in real-life situations or on the experiences of different social classes, races or ethnic groups" including women (p. 49).

Kogan and Wallach (1964) published the first comprehensive treatment of psychological risk in the book Risk-Taking: A Study in Cognition and Personality. In accounting for observed sex differences, Kogan and Wallach tentatively noted that women may approach risk-taking from "a more psychodynamic, motivational nature" (p. 201) while men appeared to regard risk-taking from a more cognitive perspective.

Twenty-three years later, in a review of the literature into individual perception of risk, Brehmer (1987) concluded that psychological research has overlooked the motivational aspects of risk. Brehmer wrote that recent research has contributed to turning "psychological risk into an almost

exclusively cognitive concept ..., [where risk-taking is measured according to] somebody's favourite formula. The motivational and emotional aspects of psychological risk have largely been ignored" (p. 26).

Sweeney (1985) and Brehmer (1987) provided evidence that the accumulated research on the psychology of risk presents definite conceptual and methodological problems that may contribute to a misrepresentation of how women define and experience risk-taking.

A number of research studies have recently explored the relationship of risk-taking behaviour to sex-role orientation or occupational choice amongst women. Three themes are evident in this research, conducted predominantly by women. Studies that relied upon either sex-role inventories, such as the Bem Sex-Role Inventory (Bem, 1977), or hypothetical decision making inventories, such as the Choice Dilemmas Questionnaire (Kogan & Wallach, 1964), as measures of risk-taking behaviour reported higher levels of risk-taking for women in non-traditional occupations (Glasgow, 1982; Steiner, 1986). Studies that utilized self-report and interview methods link risk-taking to self-concept and to the influence of the social environment and family (Gerike, 1983; Moriarty, 1983; Sweeney, 1985). Three studies suggested that there may be more similarities than differences in risk-taking behaviour amongst women (Brown, 1978; Glasgow, 1982; Shindling, 1985).

Waites (1978) and Siegelman (1983) critiqued the psychology of risk-taking that has been based upon mathematical formulae, rational decision-making theory, and pre-defined situations of risk. Both suggested that research into the nature of risk-taking must be expanded to include personal experience and social context, "from the point of view of the person assessing the danger" (Siegelman, 1983, p. 4).

This recent work has addressed narrowly defined assumptions regarding risk-taking and has contributed to an increased understanding of the personal dimensions of risk. The research demonstrates the need for further study and supports the hypothesis presented here.

The work of Carol Gilligan (1982) provided a framework for the present study. In her book, In A Different Voice, Gilligan (1982) critiqued established theories of developmental psychology and proposed that women develop moral reasoning differently than men, yet in a manner equally mature. Gilligan "sought to discover whether something had been missed by the practice of leaving out girls and women at the theory building stage of research in developmental psychology" (p. 325).

Gilligan (1982, 1986) cited consistent bias in the use of all-male samples in a review of moral development research by Piaget (1932) and Kohlberg (1958, 1981), Erickson's (1950) description of identity development, Offer's (1969) description

of adolescent development, and observations about adult development by Levinson (1978) and Vaillant (1977).

Kohlberg's (1958) six-stage theory of moral development was based on an empirical study of 84 boys. Gilligan (1982) noted that the results were generalized to include girls and women, universality was claimed for the stage sequence, and women were found "to be deficient in moral development" (p. 18). Kohlberg placed women at an average stage three where morality is characterized by interpersonal values. Men could progress to the more mature stages four, five, or six, characterized by principles of law and justice.

Gilligan challenged the conclusions offered by Kohlberg that suggested women's development is inferior. The basis for her inquiry came from the work of Nancy Choderow (1974), who attributed differences between women and men to early socialization. Choderow wrote that "in any given society, feminine personality comes to define itself in relation and connection to other people more than masculine personality does" (pp. 43-44).

Results from Gilligan's research supported the theories of Choderow and pointed to a distinctive 'voice' spoken by women that was oriented towards attachment and connectedness to others while men appeared oriented towards individuation and separateness from others. Gilligan concluded that women are no

less mature than men in their moral reasoning and that women may simply approach and experience moral questions differently.

It is evident from Gilligan's work that research into moral development has emphasized a cognitive approach to reasoning that values separation over attachment. "Though the truth of separation is recognized in most developmental texts, the reality of continuing connection is lost or relegated to the background where the figures of women appear" (1982, p. 155). Gilligan proposed that, instead of a single dimension of behavior which focuses on cognitive processes and separation, there also exists a second dimension that involves emotional processes and attachment. Recognition of both dimensions, Gilligan wrote, will allow us to "arrive at a more complex rendition of human experience which sees the truth of separation and attachment in the lives of women and men" (p. 174).

Research into gender-role identification and the domains of femininity and masculinity supports the theory that qualitative differences exist in female and male development. A tendency towards affiliation, co-operation, and communion is observed in women while men exhibit a disposition towards autonomy, competition, and agency/instrumentality (Bakan, 1966; Bem, 1974, 1978; Choderow, 1978; Gilligan, 1982; Miller, 1976; Parsons, 1955).

Jean Baker-Miller (1976) wrote that "the parameters of the females' development are not the same as the males' and that the

same terms do not apply" (p. 86). Miller called for a new language in psychology, one that includes women's experience of relationships and connection to others which she described as affiliation. Similarly, Gilligan called for a "care perspective" that, while it is "neither biologically determined nor unique to women" (1986, p. 327), has been overlooked in psychological theories and measures.

Bakan (1966) described the fundamental task of individuals to be one of balancing communion with agency. Bem (1978), in postulating the concept of androgyny, described a similar balance of the expressive-feminine with the instrumental-masculine as essential for the well-being of both women and men.

This study utilized the parameters of affiliation and instrumentality for categorizing results and for discussion. The conceptualization and design of most research into risk-taking behaviour has, to date, examined and supported the cognitive-judgemental aspects of risk-taking within a domain of instrumentality and has overlooked the motivational-emotional aspects of risk-taking within a domain of affiliation. It was thought that an exploration of this overlooked dimension may generate relevant new data and provide new insights into the nature of risk-taking.

In the conduct of her research, Gilligan (1986) identified problems in research design that may contribute to

misrepresentations of female experience. Gilligan called for further research into areas that have been explored and defined predominantly by male researchers using male subjects, resulting in universal norms derived from male behaviour. Gilligan further described the need to begin with established research tools and paradigms and to then expand upon them by exploring female behaviour using their own experience and language. There is a need to focus on the behaviour of people in real life, rather than in hypothetical situations.

The present study utilized Gilligan's recommendations for research design. It connected to previous research with the administration of an established tool, the Choice Dilemmas Questionnaire (Kogan & Wallach, 1964) as a measure of hypothetical risk-taking. The dimensions of affiliation and instrumentality were used as a conceptual framework for discussion and provided a link to the research on femininity and masculinity. The research design was expanded by encouraging women to describe personally relevant incidents of risk-taking.

Gilligan (1986) also wrote of the need to conduct research that includes women's experience for the purpose of affirming their own values and concerns. The process of research itself may, in this way, contribute to the participant's knowledge and estimation of self in order to counterbalance societal expectations of women as passive and selfless. This research was

designed to elicit comments from participants regarding the research and its impact upon participants' understanding of self and perception of risk-taking.

The approach used by Gilligan to explore new dimensions of women's moral development served as a model for the present study. The rationale and design of this research into risk-taking behaviour was supported by the work of Gilligan and others who have provided evidence that previous research has overlooked important aspects of behaviour relevant to the lives of both women and men.

#### Purpose and Organization of the Study

The purpose of this study was to expand our understanding of risk-taking as experienced by women. The topic grew out of my own experience and became focused at a time of personal discovery as I explored established patterns and beliefs about myself and my relationships with others and the world. In years past, I was actively involved in competitive sports and taught Physical Education. I was familiar with pushing physical limits and risking injury in adventure pursuits such as mountaineering, cycling, kayaking, and running.

Over the years, those interests have decreased and I find myself risking greater involvement emotionally and with other people. In my work as a counsellor, I am continually challenged as I am touched by the lives of the people I work with. In my

personal relationships, I am learning to risk the emotional openness, honesty, and connection that impacts upon our lives together.

Through these personal changes and learnings from women I have known and worked with, I have come to a profound appreciation of the courage and determination demonstrated by women in their daily lives. I experience this process as demonstrations of risk-taking. The nature of that risking takes many forms.

An inquiry into incidents of risk-taking described by women could expand narrowly defined limits of risk-taking behaviour established by psychological research and by societal expectations. In particular, it was expected that answers to the following questions would provide new information concerning the nature of women's risk-taking:

1. How do women define and experience risk-taking in their lives? Do women define and experience incidents of risk-taking in terms of instrumentality or affiliation, or both? Or is risk-taking described in terms other than instrumentality and affiliation?

2. Is there a relationship between sex-role orientation as measured by the Bem Sex-Role Inventory (BSRI) and risk-taking as measured by the Choice Dilemmas Questionnaire (CDQ) and by a self-estimate of risk scale?

3. Is there a relationship between career orientation that is either traditional or non-traditional and risk-taking as measured by the Choice Dilemmas Questionnaire and by a self-estimate of risk scale?

4. Is there a relationship between career orientation that is either traditional or non-traditional and sex-role orientation as measured by the Bem Sex-Role Inventory (BSRI)?

5. Does involvement in the research affect participants' knowledge and estimation of self?

The rationale for this study was informed by a feminist perspective. Chapter II provides an overview of feminist contributions to the psychology of women to demonstrate the need for, and assumptions of, a feminist perspective. The review of literature also presents a discussion of the psychological research into risk-taking behaviour and the domains of femininity and masculinity.

Chapter III outlines the research methods, including the selection of participants, research tools, interview procedures, and methods used for data analysis. Results of the statistical analyses and interviews with sample transcripts are presented in Chapter IV. Chapter V discusses observations drawn from the results and presents both limitations and implications of this research.

### Definition of Terms

Risk-taking. Behaviour reflected by an inclination or tendency of an individual to undertake or seek out a situation wherein the outcome is uncertain and the probability to remain secure and/or safe is unknown. Risk-taking as a spontaneous action without previous consideration or planning may be an aspect particular to an individual that is included in this definition. (Keinan, Meir, & Gome-Nemirovsky, 1984)

Affiliation. Behaviour designed to establish and maintain mutually satisfying interpersonal relationships. Activity based on co-operation, communion, and connection to others. (Bem, 1978; Miller, 1976; Parsons, 1955)

Instrumentality. Behaviour designed to achieve a specific end or goal. Activity based on competition, mastery, autonomy, and task orientation. (Parsons, 1955)

Sex-Role Orientation. As classified on the basis of participants' responses to the Bem Sex-Role Inventory (Bem, 1977). Using a median split scoring technique, participants were classified as either feminine (high feminine - low masculine scores), masculine (high masculine - low feminine scores), androgynous (high masculine - high feminine scores), or undifferentiated (low masculine - low feminine scores).

Career Orientation. As classified according to percentage of female enrollment in the occupational field. Occupations with

at least 66% of the labour force enrollment represented by women are classified as traditional. Non-traditional occupations are those in which women represent 33% or less of the total enrollment. (Employment & Immigration Canada, 1984)

Chapter II.

LITERATURE REVIEW

Either you will  
go through this door  
or you will not go through.

If you go through  
there is always the risk  
of remembering your name.

Things look back at you doubly  
and you must look back  
and let them happen.

If you do not go through  
it is possible to live worthily

to maintain your attitudes  
to hold your position  
to die bravely

but much will blind you  
much will evade you,  
at what cost who knows?

the door itself  
makes no promises

It is only a door. (Rich, 1967, p. 59)

Three areas of psychological literature are reviewed in this chapter. An exploration of women's experience of risk-taking must first concern itself with the accumulated research on risk-taking, with particular focus on women. A review of the literature on femininity and masculinity is required for the development of a conceptual framework that utilizes the dimensions of affiliation and instrumentality for discussing results. To conclude, a review of the literature regarding the status of women in psychology demonstrates the need for, and contributions of, a feminist perspective in the development of psychological research relevant to women.

#### Women And Risk-Taking

Life consists of taking risks. From the moment of birth, young children risk safety and security as they struggle to deal with an ever changing environment. We need only observe the world around us and reflect on our unique experience to recognize the centrality of risk-taking to our survival and growth.

The concept of risk-taking has long been of interest as a study in human behaviour. It is likely that, centuries ago, mathematicians first became interested in risk-taking as they sought mathematical explanations for probabilities regarding chance occurrences and gambling (Bem, 1980; Langer, 1980). Economists borrowed mathematical analyses to formulate theory regarding decisions made under condition of risk and uncertainty

(Kogan & Wallach, 1964). Philosophers have been intrigued by the relationship between skill and chance (Langer, 1980).

Interest in the psychology of risk-taking is relatively recent and developed out of research on motivation in the 1950s (Atkinson, 1957, 1964; McLelland, Atkinson, Clark, & Lowell, 1953). Psychological risk-taking theory has since taken two distinct courses: how people differ in risk-taking and their perception of risk, and how expert assessments of risk situations or conditions are made (Brehmer, 1987). Expert evaluations of risk include insurance predictions regarding the likelihood of disasters, illness, or accidents and are not relevant to the present study which is concerned with individual differences in risk-taking and the perception of risk.

Sweeney (1985) reviewed the literature on individual differences in risk-taking. She established a classification system of three groups of studies which is expanded upon here to include research relevant to the present investigation.

One category included studies that compared differences between individual and group risk-taking. Many of these studies documented a "risky shift phenomenon" (Higbee, 1970; Kogan & Wallach, 1967; Newman, 1975; Stoner, 1961; Teger & Pruitt, 1967). The phenomenon is a tendency for group decisions to shift in a more risky direction than individual decisions made prior to the group meeting. Sweeney noted that the majority of these studies

were conducted in laboratory settings, consisted of predominantly all-male samples, and were based on decision making in hypothetical dilemmas. This category of studies is not directly related to the questions posed by the present inquiry which focuses on individual risk-taking.

A second category described by Sweeney (1985) consists of studies that investigated the relationship between achievement motivation and risk-taking (Atkinson, 1957; McLelland, 1961; McLelland, Atkinson, Clark, & Lowell, 1953; McLelland & Watson, 1973; Touhey & Villemez, 1975). Alper (1974) noted that the book, The Achievement Motive (McLelland et al., 1953) devoted only 8 of approximately 400 pages to studies of women. Spence and Helmreich (1978) also critiqued motivation theory for its biased treatment of female subjects: "Female achievement behaviors were found by early investigators to be so inconsistent and resistant to theoretical analysis that subsequent investigators have tended to confine their studies to males" (p. 29). The consideration of male behaviour as the norm and female behaviour as inconsistent and contradictory with a male norm has been a common theme in psychological research (Malmo, 1983; Silveira, 1973; Spence & Helmreich, 1978).

Horner (1971, 1972) demonstrated that McLelland's research was both biased and simplistic. She proposed a 'fear of success' model that, while critiqued for perpetuating a trait theory of

personality, was significant in the development of motivation theory that took into account female values and women's social environment.

Fear of success motivation acknowledges the social and economic reality that may discriminate against women. "The girl who maintains high qualities of independence and active striving necessary for mastery defies the conventions of sex appropriate behavior, and must pay a price, a price in anxiety" (Bardwick, Douvan, Horner, & Gutman, 1970, p. 55). Negative social consequences may present particular barriers to achievement and risk-taking for women. Expectancy of success is another vital determinant of risk-taking behaviour. Research indicates that women are likely to attribute success to external sources and failure to personal faults. Men indicate the reverse (Jackaway, 1975; Nicholls, 1975; Stake, 1979). It has been demonstrated that once success does occur in the form of clear and consistent feedback, women develop an expectancy of success equal to that of men (Jackaway, 1975; Stake, 1979). Other conditions exist that may mitigate against women's achievement and risk-taking. Research also indicates that women are judged to be less competent than men with equal ability levels (Fidell, 1970; Goldberg, 1968). Women are further limited by a lack of reward and opportunity (Henley, 1985; Tangri, 1975).

The denial of access to success has been noted by Tangri

(1975) who wrote that "only the exceptional person will continue to put forth a major effort in the face of a very small chance of accomplishment" (p. 241). Tangri maintained that two factors limit women's expectancy of success: the awareness of gender-role stereotypes and a realistic assessment of the opportunity/reward structure.

The acknowledgement and assessment of limited structures and opportunities available to women marks a profound shift from the earlier theories of achievement motivation that portrayed women's risk-taking and achievement as problematic. Kaufman and Richardson, writing in Achievement and Women (1982), brought together internal psychological factors with external environmental influences in their examination of female achievement behaviour. They concluded that if motivation and behaviour seem fixed, it is to the extent that social structures remain fixed, limiting opportunity and expectations. "External factors can maintain behavior as well as internal forces" (p. 57). In light of recent research it is evident that the studies that attempted to link achievement motivation and risk-taking without taking into account social influences were inadequate in describing the reality of women's lives.

Sweeney's (1985) third category included studies that linked risk-taking with personality traits and/or cognitive decision-making (Aurich, 1976; Jellison & Riskind, 1970; Keinan, Meir, &

Gome-Nemirovsky, 1984; Kogan & Wallach, 1964). These studies attempted to measure the tendency of individuals to take pre-defined risks in laboratory settings using paper-and-pencil measures or performance in specific skill or chance activities.

Kogan and Wallach (1964) developed the first comprehensive exploration of risk-taking based on economic theories of risk assessment and decision-making. Preliminary studies by Pettigrew (1958) and Wallach and Caron (1959) had classified women as more conservative in decision-making and more likely to select categories that were most familiar than men. Females were described as narrow categorizers which was explained as "a tendency to minimize risk of error by the nay-saying route, preferring the consequences of error that come from avoiding conflict with threatening objects" (Bruner & Tajfel, 1961, cited in Kogan & Wallach, 1964, p. 3).

In 1964, Kogan and Wallach assessed 103 female and 114 male undergraduate students on their performance in seven activities involving chance, skill, gambling, and a hypothetical dilemmas questionnaire (the Choice Dilemmas Questionnaire). Prevalent sex differences were discussed (although often not statistically substantiated) including differences with respect to risk-taking under conditions of chance, in the degree of confidence about decision-making, and in the personality correlates of anxiety, self-sufficiency, rigidity, conformity, and independence. Women

were found to be less confident, higher in anxiety, rigidity, and conformity, and less likely to be self-sufficient or independent in risk-taking. "Rigidity in females may reflect a way of ordering life so as to preclude the risk of having to cope with the unexpected" (1964, p. 204). Conservatism in females was noted when the outcome of a risk was ambiguous, yet when the outcome was more certain, "a counterphobic release of boldness seems to occur" (p. 3). This interpretation by the authors presents a double-bind for women and a portrayal of female behaviour as problematic regardless of their actions.

In accounting for sex differences, it is significant that Kogan and Wallach observed that risk-taking may be approached differently by women and men. They suggested that risk-taking may be more motivational in nature for women and more cognitive in nature for men and that social norms and expectations may affect female risk-taking.

Observations make it clear that conformity and independence may have distinctly different meanings for men and women.... It is quite conceivable that high levels of independence in females, by running counter to prevalent sex norms, constitute a type of social risk-taking. We are led to the conclusion that the kinds of risk-taking we have been exploring in a laboratory context may have broad implications for social behaviours that have not usually

been conceptualized in risk-taking terms. (1964, pp. 181-182)

While reporting female behaviour as problematic, Kogan and Wallach noted that there may be distinct reasons for the differences in performance. The acknowledgement that females might experience negative consequences for risk-taking was a significant observation and offered a framework within which new approaches to the study of risk-taking might have been formulated. But, Kogan and Wallach did not develop new approaches to the definition and measurement of risk-taking from a perspective that would more closely relate to women's experience and perspective.

Kogan and Wallach's conceptualization of risk-taking was limited to gambling behaviours involving dice throws, card games, word games, and money bets; skill activities including shuffleboard; and decisions made concerning hypothetical situations. The Choice Dilemmas Questionnaire (CDQ) (Kogan & Wallach, 1964) detailed 12 situations requiring decisions about financial investment, occupational choice, and sports. Respondents were asked to advise a central male character about action he should take under varying degrees of risk. Females typically rated lower than males in 11 of the 12 situations. The one situation where females scored higher in a willingness to risk concerned a decision whether or not to marry when there were

problems in the relationship. This one situation was later dropped from the CDQ because the results were at odds with results from the remaining 11 situations where men scored higher. This is yet another example of research designed to fit a male norm at the expense of female experience. The CDQ has been used extensively to measure risk-taking behaviour in several major studies (Brockhaus, 1980; Lamm, Trommsdorff & Kogan, 1970; Levinger & Schneiger, 1969; Teger & Pruitt, 1967).

In other research, risk-taking has been defined and measured by performance in competitive skill games (Cohen, 1960), bus driving skill (Cohen, 1960), race track horse betting (Griffith, 1949; McGlocklin, 1956), and driving skill while under the influence of alcohol (Teger, Katkin, & Pruitt, 1969). The limited range of laboratory studies that have sought to measure individual differences in risk-taking have reinforced a cognitive and instrumental dimension that Kogan and Wallach suggested may be more appropriate for men. It is evident that these examples and assumptions of what constitutes risk-taking may overlook aspects of risk that are relevant to women while supporting the values of male culture and interests.

Individual differences in risk-taking behaviour have also been studied as personality attributes in selected populations such as high performance athletes and 'thrill seekers' (Berlin, 1974; Farley, 1986; Frumkes, 1981; Lichtenstein, 1981).

Attributes of men who seek careers in the police and military have been studied (Keinan, Meir, & Gome-Nemirovsky, 1984), as well as the attributes of successful business people and entrepreneurs (Brockhaus, 1980; Ronen, 1983; Sweeney, 1985).

Frumkes (1981) reviewed research into the personality of 'thrill seekers'. Hypomanics are defined as those who demonstrate excessive confidence, and who seek elation and euphoria through high risk activities. Frumkes suggested that they operate from genetically pre-determined motivation. Stimulus addicts are defined as those who are excessively autonomous, self-assertive, domineering, and chemically dependent upon adrenalin.

Grace Lichenstein, in Machisma: Women And Daring (1981), described female daredevils as possessing a higher level of male sex hormones (androgens) than non-risk-takers. These studies contributed to the understanding of risk-taking, yet many questions remain unanswered concerning the role of biology as a determinant of behaviour. Biological arguments give rise to the 'chicken-or-egg' dilemma: do androgen or adrenalin levels produce risk-taking behaviour or does physical activity stimulate chemical responses? It may be argued that androgen levels are depressed in women by a socialization process that encourages passivity and discourages physical activity. Estrogens may be depressed in men by social demands for physical activity and

social aggressiveness. The interconnectedness of biology and environment continues to interest researchers in many fields. As socialization processes change, alternate descriptions of individual differences in behaviour may come to light.

Several conclusions may be drawn from the research conducted on individual differences in risk-taking. It appears that women's experience has been overlooked or found to be problematic in the construction of risk-taking theory. The majority of research has been conducted by men using predominantly male subjects. Risk-taking has been defined by researchers and limited to specific activities such as gambling, athletics, and physically hazardous or addictive activities. The research has been conducted in laboratory, not real-life settings. Subjects have been assessed according to performance outcomes and cognitive decision-making in hypothetical situations. The research to date has not been conclusive in establishing reliable individual differences in risk-taking (Brehmer, 1987; Slovic, 1962). The feminist critique of the treatment of women in traditional psychology can be applied to the research into individual differences in risk-taking behaviour.

Another area of research on the psychology of risk-taking has focused on individual perception of risk and, in particular, on the attitudes people have regarding risk situations that may occur in life (Combs & Slovic, 1979; Lichtenstein, Slovic,

Fischhoff, Layman, & Combs, 1978; Tversky & Kahneman, 1974). Combs and Slovic (1979) examined how media coverage about violent death creates the tendency for people to overestimate the likelihood of such incidents occurring. Lichtenstein et al. (1978) explored how people estimate the probability of dying from different causes, such as being struck by lightning or from pneumonia. They reported that low probability, violent events were overestimated and high probability events, such as illness, were underestimated. Tversky and Kahneman (1974) studied the heuristics, or factors, people use in making decisions about probabilities and found that availability, recency, and vividness are factors influencing decision-making. Events that come to mind most easily are judged to have higher probability of occurring.

Brehmer (1987) reviewed this recent literature on perception of risk and found that a cognitive decision-making focus predominated the research. Brehmer's observations support the argument that the psychological research into risk-taking has been one-dimensional and limited by a cognitive, "psychosocial approach where various objects of interest have been 'measured' psychologically by having people make risk estimates" (p. 26).

Brehmer concluded that the emotional and motivational aspects of risk-taking have been overlooked. He recommended that a useful approach to further research on risk-taking would

include examination of intuitive value judgements of risk within a context of personal experience.

The insights presented by Brehmer closely parallel the tentative observations by Kogan and Wallach 23 years earlier. A cognitive emphasis in the definition and measurement of risk-taking behaviour may favour a male orientation and overlook aspects of risk-taking relevant to women. It would appear that research designed to encourage participants to define and describe risk-taking relevant to their personal experience, life situation, and values would contribute to a more complete understanding and reduce gender bias that may have led to a misrepresentation of female risk-taking.

Four recent studies, conducted by women, provided examples of an expanded view of risk-taking that takes into account personal experience and social context. Waites (1978) observed that studies of risk-taking were based on mathematical formulae and rational decision-making theory. She concluded that women faced barriers to risk-taking and recommended that female motivation be studied in the context of external constraints such as limited opportunities and negative social consequences.

Morscher and Schindler Jones (1982) conducted interviews with women and observed that women's socialization creates uncertainty and fear of the unknown. Barriers to women's risk-taking are listed as conditioning, fear, lack of knowledge, and

inertia. While the authors advocated the value of risk-taking for women, they did not explore women's strengths in risk-taking nor did they introduce external barriers that may limit risk-taking behaviour.

In a comparative study of male and female managers, Gerike (1983) found that women in managerial positions were paid less, had fewer informal interactions with colleagues, were less likely to credit success to their own knowledge, and reported lower levels of risk-taking than their male counterparts. Gerike suggested that gender and outgroup effects (i.e., lower salaries and exclusion from networks) may present significant barriers to women and contribute to a hesitancy to take risks.

Siegelman (1983) examined the personal risk-taking experience of both women and men. She maintained that social definitions of risk focus on external conditions of hazard, peril, or injury. While of interest to economists and insurance brokers, this assumption of risk-taking is not relevant to the psychology of women and overlooks "the risks from the inside - from the point of view of the person assessing the danger" (1983, p. 4).

Siegelman critiqued theories of risk-taking that are cognitive and based on assumptions of rationality and pre-defined risk:

Most of these models call for a rational scanning of alternatives and a calculation of probable gains and losses. Although rationality in decision-making is to be prized and striven for, we must also realize its limitations. These limitations stem from imperfect information, human impatience, and the difficulty of adding into our equation the emotional components of hope and fear. (1983, p. 6)

Each of these four studies has addressed narrowly defined assumptions regarding risk-taking and has contributed to an increased understanding of relevant personal and social contexts. This research supports the rationale in the present study and has contributed to new conceptualizations of risk-taking. A final selection of relevant research has explored the relationship of risk-taking behaviour to sex-role orientation and/or occupational choice amongst women.

In an investigation of married and divorced women, Brown (1978) reported no significant relationship between risk-taking and marital status and between fear of failure and risk-taking. Brown critiqued the Choice Dilemmas Questionnaire for a lack of content relevant to women.

Moriarty (1983) investigated the variables of risk-taking and self-esteem and concluded that working women with high risk-taking abilities also reported high levels of self-esteem. Similarly, in a phenomenological study of eight 'powerful' women,

Bonucchi (1985) noted that risk-taking was consistently reported as an essential element of personal identity and self-esteem.

Shiendling (1985) compared women employed in prostitution, as a high risk occupation, to other working women. He reported no significant differences in risk-taking and sensation-seeking behaviour between the groups. Shiendling concluded that, on several self-report tasks, women engaged in prostitution responded in a manner similar to other women.

Steiner (1986) reported a significant relationship between a non-traditional career choice and the risk-taking characteristic of 'bold-adventurous' using the Bem Sex-Role Inventory.

Glasgow (1982) compared women training in traditional and non-traditional occupations and reported that women in trades perceived themselves to be higher in risk-taking than women in traditional occupations. Results from the Bem Sex-Role Inventory indicated that women in non-traditional fields were also more likely to be androgynous in gender-role orientation, while women in traditional fields were more often feminine-typed. Glasgow noted that "the women in this study were more similar than different, however many of these differences [such as age, job experience] related to characteristics that might overcome the stigma of working in male-dominated trades" (p. v).

Sweeney (1985) conducted interviews with 18 female entrepreneurs in researching their perceptions and experiences of

risk-taking. The participants cited a supportive family environment, a positive self concept, and encouragement from others, as significant factors in their willingness to take risks and to engage in entrepreneurship. The three risks most frequently reported were: "taking the risk of 'being myself'; taking risks to expand the scale or scope of their enterprises; and the risks involved in decisions which impacted on the welfare of others" (p. 141).

A review of the literature regarding the psychology of risk-taking reveals distinct developments in theory over the years. Original research, conducted in the 1950s and 1960s, focused on individual differences in hypothetical risk-taking behaviour and achievement motivation. Focus on individual perceptions regarding the occurrence of risk events dominated the research in the 1970s. In the past 10 years a number of researchers, mostly women, have begun to explore risk-taking that takes into account personal experience and social context. The accumulated research provides a foundation for the present study and supports the rationale that women may define and experience risk-taking in ways previously overlooked in research on the psychology of risk.

#### The Domains of Femininity and Masculinity

Many psychological theorists have explored the domains of femininity and masculinity. Traditionally, differences between women and men have been assumed to be innate, natural, and normal

(Cox, 1981; Greenglass, 1982). Of recent concern has been the differentiation between biological factors and environmental or social factors that influence differences in behaviour between the sexes. Confusion in vocabulary has often blurred distinctions between these two sets of influence (Graham & Stark-Adamec, 1980). Greenglass (1982) defined 'sex' as associated with "biological status, while 'gender' refers to a person's learned or cultural status" (p. 10). Sex and sex-role relate to the functions of an individual as either female or male. Gender and gender-role relate to the prescribed behaviours and characteristics that are learned and assigned to an individual by cultural norms and expectations. While reproduction is a function of sex, parenting roles are a function of gender.

Prior to the 1970's, femininity and masculinity were closely linked to differences in sex and were viewed as opposite poles of a single dimension or continuum (Constable, 1987). Psychological well-being was equated, by theorists such as Freud, with conformity to sex and sex-role orientation. Healthy individuals were those who conformed to conventional male-as-masculine and female-as-feminine stereotypes (Constable, 1987; Greenglass, 1982; Whitley, 1983, 1984).

Jungian theory postulated that the nature of women and men was determined by sex but held that feminine and masculine traits were possessed by both women and men. According to Jung (1953),

the anima represents the inner feminine personality and the animus represents the inner masculine personality in both sexes. Goldenberg (1976) credited Jungian theory with acknowledgement of a two-dimensional quality to femininity-masculinity but noted that Jungian theory is limited by its devaluation of the female animus. While men are encouraged to develop their counterpart anima, women are encouraged to develop the animus only within certain limits. Women are further bound by a responsibility to assist men in developing their feminine nature.

The inadequacy of a single dimension to describe the feminine-masculine dichotomy has been substantiated by research into gender-role orientation (Bem, 1974; Constantinople, 1973; Parsons, 1955). Sociologist Talcott Parsons (1955) first introduced the two dimensions of 'expressiveness' and 'instrumentality' to describe roles and responsibilities within a culture:

The area of instrumental function concerns relations of the system to its situation outside the system, to meet the adaptive conditions of its maintenance and equilibrium and instrumentally establishing the desired relations to external goal objects. The expressive area concerns the internal affairs of the system, and the maintenance of integrative relations between the members, and regulation of the patterns and tension levels of its component units. (p. 47)

The expressive-instrumental dichotomy was originally described as functional and characteristic of all members of a social system (Eichler, 1980). When later used to describe behaviours within family systems there emerged a gender-specific designation of women as expressive and men as instrumental. Eichler (1980) cited Mussen (1969) to demonstrate this evolving cultural norm:

... the majority of societies around the world organize their social institutions around males, and in most cultures men are more aggressive and dominating, have greater authority and are more deferred to than women. They are generally assigned the physically strenuous, dangerous tasks and those requiring long periods of travel. Women, on the other hand generally carry out established routines, ministering to the needs of others, cooking and carrying water. The husband-father role is instrumental, i.e. task-oriented and emotion-inhibited in nearly all cultures, and the wife-mother-role is customarily more expressive, i.e. emotional, nurturant, and responsible. (Mussen, 1969, pp. 707-708, cited in Eichler, 1980, p. 29)

It is significant to note that, while Parsons introduced the terms expressive and instrumental to describe social functions, his sociological position is that of structural functionalism. His research was descriptive in nature only and did not analyze

the causes or implications of these social functions. Feminist theory critiques this approach for its failure to account for the underlying socio-political dimensions of the division of labour and socialization linked to sex.

Within the social sciences, including psychology, there has developed a distinct polarity between the characteristics of femininity and masculinity derived from biological differences of sex. Feminist scholar Shulamith Firestone (1970) linked this polarity within the family and society to the biological realities of female reproductive capacity. Firestone asserted that once divisions of labour arising from reproductive functions were established in the family they created an imbalance of power which was maintained by social structures and conditioning. Feminist theory maintains that differences between feminine and masculine roles are not innate but rather socio-political in origin and are created by unequal access to power (Cox, 1981).

Recent research in psychology has attempted to bridge the polarities between femininity and masculinity. Bakan (1966) described the fundamental task of individuals to be that of balancing 'agency' (masculine) with 'communion' (feminine). I. Broverman, D. M. Broverman, Clarkson, Rosenkrantz, and Vogel (1970) critiqued early models of mental health which defined the healthy male as active, independent, and logical and the healthy female as dependent, passive, and illogical. This classic study

exposed a double standard of mental health that classified women as less healthy than men.

Maccoby and Jacklin (1974) conducted a comprehensive analysis of approximately 1600 studies related to sex differences and concluded that there were a number of "unfounded beliefs about sex differences" (p. 349) including: that girls were more social, suggestible, audial, and affected by heredity, with lower self-esteem and achievement motivation, while boys were more analytical, visual, and affected by environment. They reported well-established differences in only four areas. Girls were consistently found to excel in verbal ability. Boys excelled in visual-spatial and mathematical abilities and were more aggressive. Maccoby and Jacklin have been critiqued for inconsistency in study selection and methodological weaknesses (Block, 1976, 1981), yet their results continue to be cited as evidence of the lack of reliable and conclusive differences between the sexes. Evidence increasingly indicates that there may be more similarities than differences between women and men than was previously assumed (Greenglass, 1982).

Bem (1974) argued that individuals possess both feminine and masculine qualities, which she termed expressive and instrumental. Androgyny, described by Bem as a balance of both expressive and instrumental qualities, was formulated as a new concept of psychological well-being. Bem suggested that sex-

typed individuals, that is masculine males and feminine females, might be limited in the range of behaviours available to them. Androgynous individuals would be freer to engage in both masculine and feminine behaviours and would be more flexible and adaptable in a variety of situations.

Bem constructed an empirical measure, the Bem Sex-Role Inventory (BSRI) that treats masculinity and femininity as separate dimensions (consistent with the definitions used in this study, 'sex-role' is actually gender-role). The BSRI provides a score that classifies individuals as one of feminine, masculine, androgynous, or undifferentiated. Bem conducted a series of studies (1974, 1978) using the inventory and concluded that sex-typing does restrict behaviour and that androgynous females and males were more flexible and comfortable in cross-sex behaviours.

Recent research has contradicted Bem's hypothesis that sex-typed individuals are less psychologically adjusted (Deutsch & Gilbert, 1976; Jones, Cherovetz, & Hansson, 1978; Orlofsky, 1981; Silvern & Ryan, 1979). Bem's conceptualization of two distinct dimensions of femininity and masculinity has also been challenged. Lott (1981) cautioned that a two dimensional approach may further encourage stereotypical behaviour. "To label some behaviors as feminine and some as masculine is to reinforce verbal habits which undermine the possibility of degenderizing behavior" (p. 178).

In support of her earlier work, Bem wrote that "this concept (of androgyny) can be applied equally to both women and men, and it encourages individuals to embrace both the feminine and the masculine within themselves" (1987, p. 245). Bem has recently begun to reconsider the concept of distinct masculine and feminine dimensions. She cited problems that arise from a prescription of androgyny that requires individuals to conform to yet another mode of behaviour that is both feminine and masculine. In developing a new paradigm, gender schema theory, Bem suggested that femininity and masculinity are learned phenomena and are products of society and culture. Bem now argues that gender influences are social and political in origin. "In short, human behaviors and personality attributes should no longer be linked with gender and society should stop projecting gender into situations irrelevant to genitalia" (1987, p. 245).

The development of theory related to the dimensions of femininity and masculinity has progressed rapidly over the past twenty years as demonstrated by the revisions in Bem's original research. Emphasis on sex and sex-differences determined by biology has shifted towards a focus on the influences of learned socialization and culture. New theory in the area of sex and gender continues to shape our understanding of similarities and differences between women and men.

### Women and Psychology

"The female is a female by virtue of a certain lack of qualities. We should regard the female nature as afflicted with a natural defectiveness" (Aristotle, translated by Sinclair, 1962, p. 1259).

Psychology, loosely defined as the study of human behaviour, concerns itself with how the individual feels, thinks, behaves, develops, and perceives the world. A relatively young discipline, psychology grew out of the study of philosophy and inherited ancient beliefs about the nature of women and men that influenced the development of psychological theory. The study of differences between women and men has been a predominant theme in psychology as Esther Greenglass (1982) noted:

Throughout the centuries, the differences between women and men have been a source of mystery and intrigue.... Women have been viewed as mysterious creatures, and folk wisdom is replete with attempts to explain their nature. Ancient philosophers regarded women as essentially creatures of emotion and men as rational, intellectual beings. Men, then, were seen as having to exert authority over women and control them. (1982, p. 1)

The birth of contemporary psychology is often marked by the opening of the first psychological laboratory in 1879, in Germany. Sigmund Freud, the 'father of psychoanalysis', began

publishing material shortly thereafter. It is likely that no single theorist had as pervasive an influence on the development of the psychology of women, and psychology in general, as did Freud (Walsh, 1987).

Psychoanalytic theory explains behaviour in terms of unconscious motivation and conflict (Chaplin, 1975). Freud's conceptualization of the development of sexual identity for normal adult femininity has been summarized by Kaplan and Yasinski (1980). As young girls discover the existence of the male penis, they develop penis envy which creates conflict and feelings of inferiority, jealousy, and shame. Feeling castrated, young girls relinquish sexual stimulation of the clitoris and become characterized by a self-focused concern with the body (narcissism) and a tendency to derive pleasure from pain (masochism). At adolescence, sexual focus shifts to vaginal sexuality, associated with a transition from activity to passivity, and a replacement of a wish for a penis with a desire for a baby. The course of gender identification leaves women with lesser moral development, social interest, and capacity for refocusing inappropriate instincts than men. A failure to resolve penis-envy conflict results in neurosis (sexual inhibition) or the development of a masculinity complex.

Female personality development, according to Freudian theory, is determined by biology and reproductive function. Male

characteristics are viewed as the norm and women, by comparison, are found to be inferior to men physically, emotionally, and ethically (Ruth, 1980).

Freud based his theories of female development on observation and descriptive case studies of selected upper-middle and middle class patients. Janeway (1971) and others have critiqued Freud's sample for not being representative of a normal, or healthy, population. Freud's theories have been examined for cultural and historical biases. It has been noted that he wrote in a social context that was Victorian, highly oppressive, and sexually repressive (Chesler, 1972; Lerman, 1987). Psychoanalytic theory was widely accepted without objective evidence or proof of Freud's insights (Fisher & Greenberg, 1977). Despite these criticisms, psychoanalytic concepts have profoundly influenced the psychology of women for over one hundred years. However, resilient as they are, psychoanalytic views did not go unchallenged in the early 1900's.

A psychology of women by women emerged in the work of Thompson [Wooley] (1903), Hollingworth (1914, 1916), and Horney (1926/1981). In a detailed study of 50 male and female students, Helen Thompson [Wooley] concluded that there were more intellectual similarities between the sexes than differences. Leta Hollingworth critiqued social expectations and structures that pressured women into what has come to be labelled as 'the

motherhood mandate' (Hollingworth, 1916; Russo, 1979).

Hollingworth contributed to the credibility of women's psychology when she foresaw that perhaps one day the psychology of women would be "based on truth, not opinion; on precise, not on anecdotal evidence; on accurate data, rather than on remnants of magic" (1914, p. 99).

Karen Horney, trained in psychoanalysis, critiqued Freud's view of women as biased. In A Flight From Womanhood (1926), Horney wrote:

Like all sciences and all valuations, the psychology of women has hitherto been considered only from the point of view of men ... the psychology of women hitherto actually represents a deposit of the desires and disappointments of men. An additional and very important factor in the situation is that women have adapted themselves to the wishes of men and felt as if their adaptation were their true nature. (1926, cited in Cox, 1981, p. 61)

Horney suggested that it might be men who suffered from 'womb envy' (1926/1981, 1930/1967). Both Horney and Clara Thompson (1942, 1950) concurred with Freud that women may indeed envy men but, rather than the penis, the object of the envy was men's power and status in society.

The debate surrounding Freudian theory continued after his death in 1939. Both Horney and Clara Thompson were expelled from

the New York Psychoanalytic Institute for their dissenting views. Others supported and expanded his theories. Helene Deutsch published the first comprehensive treatment of female psychology in 1944. The Psychology of Women: A Psychoanalytic Interpretation, a two volume work, characterized the female personality as passive, masochistic, and narcissistic. The book was highly influential throughout the 1950s.

The 1960s, in North America, were characterized by intense social unrest. A renewed feminist movement grew out of dissatisfaction about the continued oppression of women during the civil rights campaign in the United States. A new approach to the psychology of women was demanded by feminist scholars. A landmark essay by psychologist Naomi Weisstein (1968) entitled "Kinder, Küche, Kirche (Children, Kitchen, Church) As Scientific Law: Psychology Constructs the Female" presented a new feminist challenge to traditional psychology. "Psychology has nothing to say about what women are really like, what they need and what they want, essentially because psychology does not know" (p. 135).

Weisstein cited the following faults in traditional psychology. Women were infrequently studied. Theories viewed male behaviour as the norm and female behaviour as deviant from the norm. Assumptions about women were viewed as accurate portrayals of female behaviour. Only women who fulfilled the feminine stereotype were healthy and happy, yet not as healthy as

men. Differences in male and female behaviour were seen to be due to biology. The social context of women's (and men's) lives had been ignored and theory had been accepted without supporting evidence.

Weisstein concluded with a typical psychological profile of women as:

... inconsistent, emotionally unstable, lacking in a strong conscience or superego, weaker, nurturant rather than intelligent, and if they are at all normal, suited to the home and the family. In short, the list adds up to a typical minority group stereotype of inferiority: if women know their place, which is in the home, they are really quite lovable, happy, childlike, loving creatures. (1968, p. 144)

The early 1970s witnessed a major change as a new wave of feminist psychologists and psychiatrists (Bardwick, 1971; Chesler, 1972; Horner, 1972; Maccoby & Jacklin, 1974; Miller, 1973, 1976; Mitchell, 1974; Sherman, 1971) began reconstructing theories to challenge what Nancy Henley called "psychology against women" (1974, p. 20). While diverse in approach, these scholars laid the groundwork for a new psychology of women that developed hand-in-hand with political feminism. This modern feminist ideology was interdisciplinary, encompassing analysis from psychology, sociology, anthropology, history, literature, medicine, and economics (Choderow, 1974; Firestone, 1970;

Friedan, 1963, 1977; Greer, 1971; Millett, 1970). The development of an interdisciplinary perspective contributed significantly to the study of women and "led to a re-evaluation of existing theory and research, to a questioning of basic assumptions, and to analyses that have demonstrated how each aspect of our discipline (psychology) has supported a functional social mythology about women" (Mednick, 1981, p. 91).

The field of women's psychology informed by feminist scholarship continues to influence psychology in general. New theory and treatment strategies have developed out of feminist concerns including violence towards women, sexual and emotional abuse, and women in the labour force. Traditional theory and treatment approaches have been radically challenged, revised and, at times, dismissed. Psychoanalysis provides an excellent example.

Feminist theorists have made efforts to integrate psychoanalytic and feminist approaches to psychology (Chehrazi, 1986; Lewis, 1986; Mitchell, 1974; Sayers, 1986). Chehrazi (1986) reviewed recent developments in psychoanalysis and argued for its relevance to women. Lerman (1987) in a review of feminist psychoanalytic theorists (Choderow, 1978; Greenspan, 1983; Miller, 1976), established a preliminary set of criteria upon which woman-based theories of personality might be evaluated. The criteria articulated the following requirements:

clinical usefulness; recognition of the diversity of women; a positive view of women; relevance to women's real-life experience; recognition of the connection between internal (personal) and external (social) factors; inclusive language; and support for non-sexist interpretations and therapy. In reviewing psychoanalysis using the criteria, Lerman concluded that psychoanalytic theory was "so fundamentally flawed in its thinking about women that it cannot be repaired, however extensive the tinkering with it" (Lerman, 1987, p. 44).

While the debate around psychoanalytic theory is ongoing, feminist research continues to change the discipline of psychology in many ways: revising established theory, discovering new data, and challenging methodology that reflects bias and inconsistency in the treatment of female subjects (Horner, 1971; Mednick, 1981).

Carol Gilligan (1982) forced a re-examination of moral development theory in her critique of the assumptions, methodology, and conclusions of Lawrence Kohlberg (1958, 1981). Kohlberg's study of young boys was based upon subjects' cognitive and judgemental evaluations of hypothetical moral dilemmas. In an effort to discover whether this approach had overlooked significant factors, Gilligan conducted studies that were intended to "expand the usual design of research on moral development by asking how people defined moral problems and what

experiences they construed as moral conflicts in their lives, rather than by focusing on their thinking about problems presented to them for resolution" (1982, p. 3).

In a series of three studies with both women and men, Gilligan asked participants to describe experiences concerning personal decisions of morality, conflict, and choice. In one study on abortion decisions, Gilligan traced the experiences of women to develop a phenomenological portrait of female moral development that included emotional as well as cognitive aspects of moral decision making. Gilligan contributed to an expansion and revision of moral development theory by acknowledging the dimension of attachment and emotion described by women as equally valuable and mature as the dimension of separateness and cognition explored by Kohlberg.

Since publication, Gilligan's research has been subject to extensive debate. Greeno and Maccoby (1986) argued that Gilligan's results contradict later studies based on Kohlberg's scale with both male and female samples that showed no difference between the sexes in moral development. Weaknesses in methodology, including inadequate sample size, a lack of an objective scoring system, and lack of empirical data to support conclusions, have been cited (Colby & Damon, 1987; Luria, 1986; Greeno & Maccoby, 1986). Carol Stack (1986) critiqued Gilligan for not attending to differences in race, culture, and class.

Gilligan has been supported for challenging the tendency to establish norms based on all-male experience (Kerber, 1986; Walsh, 1987). Gilligan's claim of differential development of males and females has been documented by other researchers (Bakan, 1966; Bem, 1974; Broverman et al., 1970; Choderow, 1978). Colby and Damon (1987) credited Gilligan for her extension of research design and theory on moral development: "... her use of situations in which real moral decisions are made could constitute an advance over the use of hypothetical moral dilemmas" (p. 327).

The criteria proposed by Lerman (1987) may be used to review woman-based theories of development. Gilligan's contributions satisfy most of these criteria in that her results are clinically useful, they view women positively, arise from women's experience, and contribute to an increased understanding of both men and women. Gilligan acknowledged the social circumstances that affect women as well as their inner psychological make-up and allowed women to take an active role in relating their experience. According to Lerman's criteria, Gilligan may be critiqued for not including a broad range of female subgroups and for generalizing from a small sample size.

In defense of her work, Gilligan (1986) suggested that critics, who argue that her results do not match the findings of psychological research, accept the very research that she calls

into question. Gilligan asserted that in order to demonstrate that women experience life differently from portrayals in established psychological theory, only one example is needed. To claim that common themes appear in female experience requires "a series of illustrations" (p. 328). Gilligan provided both. Gilligan has also, on two occasions, reported no sex differences using Kohlberg's scale. Gilligan argued that such results do not detract from her earlier work.

... the fact that educated women are capable of high levels of justice reasoning has no bearing on the question of whether they would spontaneously choose to frame moral problems in this way. My interest in the way people define moral problems is reflected in my research methods, which have centered on first-person accounts of moral conflict. (1986, p. 328)

Gilligan was deliberate in her claim that the dimension of affiliation found in her research is not exclusively a female perspective, nor is it biologically determined. She further stated that her results were based on research with both men and women. However, the developmental theory Gilligan articulated was "different from that currently embedded in psychological theories and measures" (1986, p. 329). Gilligan's contribution is significant for both women and men. Her feminist perspective offers the potential for psychological research to be gender-

free, "yielding a more encompassing view of the lives of both of the sexes" (Gilligan, 1982, p. 4).

A feminist perspective embodies a complexity of views that includes political, social, economic, spiritual, and personal values and theory. Within psychology, a feminist perspective incorporates several assumptions, one of which is the necessity to make explicit those assumptions. The perspective values women's experience. Feminism maintains that the present subordinate position of women is a product of political structures, culture, and societal expectations, not of intrinsic biological inferiority. The treatment of women in traditional psychology results from women's subordinate condition, is entrenched by historical and class context, and is sociopolitical in origin (Tiefer, 1981). Hence the condition of women is amenable to change. A feminist psychological perspective seeks to promote that change by focusing upon the need for change in the norms and expectations in psychology and in society, rather than on the need for women to adapt to a stereotypical norm.

The purpose of a feminist inquiry, such as this present study, has been summarized by Margaret Eichler (1980).

At its best feminist writing fulfills three functions: it is critical of existent social structures and ways to perceive them, it serves as a corrective mechanism by providing an alternative viewpoint and data to substantiate

it, and it starts to lay the groundwork for a transformation of social science and society. (p. 9)

### Summary and Research Hypotheses

The review of literature into women and risk-taking behaviour provides this research with hypotheses germane to the research questions posed in Chapter 1. These hypotheses, or anticipated outcomes, arise from literature that includes a feminist critique of traditional psychological research. This feminist contribution has significant influence upon both the research questions and hypotheses. The anticipated outcomes within a feminist framework differ from those hypotheses that would arise from a review limited to the traditional research into risk-taking behaviour. The basic question explored in this research concerned personal experience of risk-taking. Within the traditional psychology of risk, that question has yet to be posed. Rather, assumptions of what constitutes risk-taking have been tested by laboratory experiments and hypothetical decision making inventories.

Research question 1 explored the definition and nature of risk-taking described by women: How do women define and experience risk-taking in their lives? Do women define and experience incidents of risk-taking in terms of instrumentality, or affiliation, or both? Or, is risk-taking described in terms other than instrumentality and affiliation? The literature

suggests that an exploration of such personal experience within a social context may lead to new conceptualizations of risk-taking (Siegelman, 1983; Sweeney, 1985). It was hypothesized that women in the study would provide examples of risk-taking that relate to both the dimensions of affiliation and instrumentality (Gilligan, 1982; Siegelman, 1983; Sweeney, 1985). Support for this hypothesis is found in research on the psychology of risk. There is evidence that traditional conceptualizations of risk have not accounted for emotional and motivational aspects of risk-taking (Brehmer, 1987; Kogan & Wallach, 1964).

Research question 2 explored the relationship between sex-role orientation and risk-taking: Is there a relationship between sex-role orientation as measured by the BSRI and risk-taking as measured by the CDQ and by a self-estimate of risk scale? One study found that women classified as androgynous were more likely to score higher on measures of risk-taking behaviour than women classified as feminine (Glasgow, 1982). Three studies have linked high levels of self esteem to high levels of risk-taking (Bonucchi, 1985; Moriarty, 1983; Sweeney, 1985). Bem (1974, 1978) has linked androgynous sex-role orientation in women to greater participation in cross-sex behaviours and to higher levels of mental health. A link has been reported between androgynous sex role orientation and higher scores on the "bold-adventurous" item of the BSRI (Steiner, 1986). Yet, the

literature has also cautioned that more similarities than differences may exist amongst women relative to sex-role orientation and risk-taking behaviour (Brown, 1978; Glasgow, 1982; Schiendling, 1985).

Given the conflicting nature of earlier research, the present study tests the following null hypothesis: There will be no significant difference among groups assigned by sex-role orientation on mean scores obtained on two measures of risk-taking (the CDQ and the self-estimate of risk scale).

Research question 3 asked: Is there a relationship between career orientation that is either traditional or non-traditional and risk-taking as measured by the CDQ and by a self-estimate of risk scale? Support was found in two previous studies (Glasgow, 1982; Steiner, 1986) for the following hypothesis tested in this study: women in non-traditional occupations will score significantly higher on two measures of risk-taking (the CDQ and the self-estimate of risk scale) than women in traditional occupations.

In both research questions 2 and 3, the tested hypotheses assumed that the CDQ is an accurate measure of women's risk-taking behaviour. There is considerable evidence in the literature that challenges the appropriateness of the CDQ and other hypothetical decision-making inventories (Brehmer, 1987; Brown, 1978; Siegelman, 1983; Sweeney, 1985; Waites, 1978). It

was thought that results arising from the hypotheses posed in questions 2 and 3 may provide further insight into the appropriateness of the CDQ as a measure of women's risk-taking.

Research question 4 asked: Is there a relationship between career orientation that is either traditional or non-traditional and sex-role orientation as measured by the BSRI? Glasgow (1982) reported links between androgynous sex-role orientation and non-traditional occupational choice and between feminine sex-role orientation and traditional occupational choice. It may be hypothesized that a significant difference will exist between the two occupational groups with respect to sex-role orientation. Specifically, it was hypothesized that women in non-traditional occupations are more likely to be classified as masculine or androgynous in their sex-role orientation than women in traditional occupations. Also, women in traditional occupations are more likely to be classified as feminine in their sex-role orientation than women in the non-traditional group.

Research question 5 asked: Does involvement in the research affect participants' knowledge and estimation of self? Based upon the contributions of feminist scholars (Gilligan, 1982; Lerman, 1987; Oakley, 1981), it was hypothesized that participants would report an increase in knowledge and understanding of risk-taking.

## Chapter III.

### RESEARCH METHODS

This investigation was a survey designed to explore the definition and description of risk-taking behaviour as experienced by women and to analyze significant differences between women in traditional and non-traditional occupational fields. Both qualitative and quantitative research methods were employed. This chapter describes the participants, research procedures, measures, and methods of data analysis.

#### Participants

Forty-four volunteers participated in this study. The sample was drawn from four community groups representing a cross-section of traditional and non-traditional occupations. The traditional cluster consisted of 15 women who were clients at Options for Women (a career counselling agency), and 7 women who were members of the Kenilworth Play School Association. The non-traditional cluster was represented by 11 women who were members of the National Association of Women in Construction, 7 women who were members of Women in Scholarship, Engineering, Sciences, and Technology (W.I.S.E.S.T.), and 4 women who were attending Options for Women.

The four groups had been identified through women's directories and recommendations from personal contacts made following a recent arrival in Edmonton. The groups were chosen

on the basis of their accessibility and voluntary membership. Each provided access to a variety of women engaged in traditional and non-traditional occupations. A total of seven groups were contacted, but three declined due to time commitments or a lack of interest. Fifty-one women volunteered. Seven were not available due to scheduling problems or personal choice, resulting in a participation rate of 86%.

The volunteers were assigned to one of two occupational groups, traditional or non-traditional, as defined by Employment and Immigration Canada (1984), on the basis of employment, vocational goal, or work activity (e.g. homemaking). These occupational groups were selected for the purposes of comparing descriptions of risk-taking and analyzing significant relationships between the two groups.

The non-traditional cluster was represented by 22 women working or training in a variety of occupations: 11 in the construction industry; 7 in engineering or technical sciences; and 4 in non-traditional self-employment or service occupations. The traditional cluster included 22 women engaged in, or seeking, the following work activities: 6 in clerical occupations; 5 in teaching or the social sciences; 5 in full-time homemaking; 4 in sales or marketing; and 2 in the fine arts (see Appendix A).

The women represented a variety of backgrounds with respect to age, marital status, number of children, employment status,

and income and education levels. Ages ranged from 22 to 61, with an average age of 38. Thirty women lived with a partner, 9 lived alone, 2 were single parents, and 3 lived with friends or parents. Twenty participants had no children, 16 women had one or two children, and 8 women had three or more children. At the time of the interviews, 23 women worked full-time, 2 part-time, 8 women were unemployed and 4 were students. Seven women worked primarily as homemakers, although two were also employed part-time. Income levels ranged from no income to over \$40,000, with an average range of \$15,000 - \$25,000. Among those married, the average income of partners was over \$30,000. Levels of education ranged from incomplete High School to Ph.D.

### Procedures

The recruitment of participants was conducted through contact with the four community groups. Letters of introduction were sent to each group outlining the research proposal and requesting permission to recruit volunteers from the membership (see Appendix B). Telephone conversations and meetings with representatives of the four groups resulted in confirmation letters granting permission to recruit volunteers.

A 30 minute presentation was conducted with potential volunteers from each group outlining the research topic, interview procedures, ethics, and confidentiality (see Appendix C). Volunteers signed a contact sheet and were given a letter

detailing the research questions for their consideration prior to the interviews (Appendix D).

Follow-up telephone calls were made within 10 days of the presentation to schedule interview time and location with those women who expressed a continued interest in volunteering. The interviews were conducted either in the participant's home, an office rented for the purpose of interviewing, or my home, whichever was most convenient for participants. The location of the interview was seen as important in order to ensure comfort and privacy. Care was taken to provide an atmosphere of informality and safety. The rented office space was arranged with couches and chairs. Tea or coffee was available.

The interviews averaged approximately one hour in length. Handwritten notes and audiotapes were utilized to record interview responses. Tapes were destroyed upon completion of the study. Some women expressed concern about the recording and were assured that the tape recorder would be turned off upon request. One request was made and respected.

The interview began with a standardized introduction to the purpose and format of the interview. Each participant was told what would happen with the results (see Appendix E). Participants then signed a consent form and those wanting a summary of results provided an address (see Appendix F). Participants were encouraged to voice any concerns or questions

regarding the interview and these were answered as fully as possible without jeopardizing the results.

The interview proceeded in the following sequence: completion of a demographic profile, interview questions, administration of the BSRI and the CDQ, concluding interview questions and comments, and appreciations.

Member groups were sent thank-you letters. All groups expressed an interest in the research and, where possible, a follow-up presentation was held to discuss results. Individuals were sent a summary of overall findings, and individual scores on the inventories were available to women who requested them.

#### Measures and Methods

Four pilot interviews were conducted to determine the appropriateness of the research procedures and measures. Revisions were made as necessary. The finalized protocols and instruments completed by participants were administered in the following sequence:

Demographic Profile. Information was collected on age, living (marital) status, number of children, employment status and occupation, level of education, income level, and, if applicable, income level of partner. The demographic profile was used to describe the research sample and to assess similarities and differences between traditional and non-traditional occupational groups (see Appendix G).

Interview Format. The interview questions and inventories were administered in the following sequence (see Appendix H):

1. If you were to think of 'risk-taking' in your own life and experience, what would be your personal understanding or definition of the term 'risk-taking'?

2. I'd now like you to focus on that personal understanding. Can you think of recent specific incidents that have been meaningful risk-taking situations for yourself? Briefly describe up to five examples.

3. What, specifically, was the risk for you in each of those situations?

4. Can you now think of recent specific incidents where you decided NOT to take a risk? Briefly describe up to five examples.

5. Again, what specifically was the risk for you in each of those situations?

6. If you were to rate yourself on your willingness to take risks, using your own definition of the term, where would you place yourself on a 7-point scale? (1 - never take a risk: 7 - always take a risk)

7. Administration of the Bem Sex-Role Inventory

8. Administration of the Choice Dilemmas Questionnaire

9. The inventory you have just completed measured a tendency to take risks in situations where the outcome is

unknown. What was your reaction to that inventory?

10. In closing, has what we have talked about here affected your understanding of risk-taking in any way? Comment:

11. Have you anything to comment on about this session or the research? Have you any suggestions as to how this research might be useful?

12. Would you like to hear about the results?

The first five interview questions were designed to encourage participants to define and describe risk-taking that has been meaningful in their lives. These questions related directly to the central theme of this study as posed in the first research question (see Chapter I). It was thought that asking participants to describe specific incidents would assist in the conceptualization of risk-taking in terms of affiliation and instrumentality. It was assumed that both risks taken and risks not taken were important to determine the nature of risk-taking relevant to participants.

Interview items six, seven, and eight were designed to address the second research question that explores the relationship between sex-role orientation and risk-taking. Results from the BSRI (#7) provided subgroups according to sex-role orientation. Significant relationships between subgroups could then be analyzed on the basis of results of the CDQ (#8) and a self-estimate of risk-taking (#6).

Results from the self-estimate of risk-taking (#6) and the CDQ (#8) also addressed the third research question concerning the relationship between career orientation and risk-taking. Traditional and non-traditional sub-groups were analyzed for similarities and differences based upon results from the CDQ and the self-estimate of risk-taking.

The fourth research question sought to determine whether a relationship existed between career orientation and sex-role orientation. Analysis of the results from the BSRI (#7) were compared between traditional and non-traditional occupation groups.

Upon completion of the CDQ, participants were asked, in question nine, to describe their reaction to that inventory. It was thought that responses might demonstrate whether scales based on hypothetical situations, such as the CDQ, accurately reflect risk-taking relevant to the participants. Question nine was crucial to the concern that psychological research has not fully explored risk-taking that takes into account women's life experience. With reference to Gilligan (1982), the development of risk-taking theory requires a review of established measures, such as the CDQ, and new approaches in methodology to capture a more accurate portrayal of human behaviour. It was thought that the participants' observations might contribute to a critique of the CDQ and to participants' active involvement in the research process.

Interview Question 10 was designed to encourage participants to reflect upon changes in their understanding of risk-taking as a result of participation in the study. In conducting this project from a feminist perspective, it was important that the research generate information and insight for both interviewee and interviewer (Oakley, 1981). This question provided the opportunity to discuss whether the design and process of the research contributed to participants' self-knowledge as posed in the fifth research question. Interview questions 11 and 12 provided similar opportunities for each participant to have an active role in the research through evaluation, recommendations, and feedback.

The interview questions were designed to involve two levels of inquiry. The generation of data relevant to risk-taking was the primary emphasis in the first eight questions. Participants were encouraged to comment on the research itself in the last four questions. It was thought that these self-reported observations would support the research findings and actively engage participants in the research process.

Bem Sex-Role Inventory (Bem, 1978) (See Appendix I). The BSRI consists of 60 adjectives used as personality or character descriptors. Twenty items are considered feminine, 20 masculine, and 20 neutral. Respondents rated themselves on a 7-point scale ranging from 1 (never or almost never true) to 7 (always or

almost always true). Individuals receive a masculinity score and a femininity score based on the endorsement of the appropriate descriptors. A split-median technique was used to further classify respondents into one of four categories; feminine, masculine, androgynous, or undifferentiated. The median masculine score for the sample was 100 and the median feminine score was 96. The resulting categories were:

Feminine: femininity score  $> 96$ , masculinity score  $< 100$ .

Masculine: femininity score  $< 96$ , masculinity score  $> 100$ .

Androgynous: femininity score  $> 96$ , masculinity score  $> 100$ .

Undifferentiated: femininity score  $< 96$ , masculinity score  $< 100$ .

Women scoring high on femininity and low on masculinity are, according to Bem, sex-typed. Women with high masculinity and low femininity scores are sex-reversed. Women with high masculinity and femininity are androgynous, while women with low scores on both scales are undifferentiated in gender-role orientation.

Bem reported good internal consistency with coefficient alphas of .78, .86, and .82 for the respective femininity, masculinity, and androgyny scores in the normative sample (816 male and female students at Stanford University, 1978). Test-retest reliability correlations were .80, .94, and .86 for the same scales administered twice, 4 weeks apart.

The BSRI was chosen for this study to demonstrate whether any relationships existed between women in traditional and non-traditional career groups and their gender-role orientation. The use of the BSRI also permitted comparisons between groups of women with different gender-role orientations and their respective risk-taking estimations on the CDQ and self-estimate of risk. The popularity of the BSRI made it an appropriate tool in this study as a basis from which similarities and differences in risk-taking might be described.

The Choice Dilemmas Questionnaire (Kogan & Wallach, 1964) (See Appendix I). The CDQ consists of 12 hypothetical dilemmas or situations that are described by the authors as "likely to occur in daily life" (Kogan & Wallach, 1964, p. 257). Situations include decisions regarding career, politics, financial investments, sports, escape from prison, and marriage. Respondents are asked to choose between alternatives with varying levels of probability in advising a central male character. The scale ranges from recommending the alternative with 1 chance in 10 of success (high risk) to recommending the alternative with no action taken, no matter what the chance of success (low risk). Respondents received a score that, statistically transcribed, reflected a total out of a maximum 108 points. The higher the transcribed score, the greater the assumed risk-taking tendency of the individual.

Wallach and Kogan (1961) reported satisfactory reliability for the CDQ. Using the Spearman-Brown formula to predict the reliability of the test if it were lengthened, they reported reliability co-efficients of .62 for women and .53 for men. This is viewed as satisfactory for a 12 item test. The CDQ was chosen over other measures of risk-taking because of its consistent use over the years.

One item regarding marriage decisions was found to be inconsistent with results from the other 11 items in Kogan and Wallach's research because women scored higher than men. The item was eliminated from later studies. For the present study, all 12 items were included and the central male character was replaced by a female in one-half of the situations to reduce gender bias. Women who participated in the study were asked to comment on their reaction to the CDQ in order to test its relevance to women and events in their daily lives.

Data Analyses. Two types of data analyses were undertaken in this study. Statistical analyses were conducted on the demographic profile and inventory results in order to provide a basis for comparison between women in traditional and non-traditional careers and between women of differing sex-role orientations. Interview data were analyzed using qualitative coding procedures in order to describe the definitions and incidents of risk-taking, comments, and recommendations reported

by participants.

Statistical Analyses. Descriptive statistics used to summarize and translate data included the calculation of frequencies, percentages, means, and standard deviations for the demographic variables. Results from the CDQ were transcribed to reflect attained scores out of a maximum total of 108 points. On the basis of responses to the BSRI, participants were classified as feminine, masculine, androgynous, or undifferentiated using a split-median technique.

Correlational statistics were used to describe the relationship between groups. Cross tabulations using chi-squares or t-tests, as appropriate, were performed on demographic variables and inventory results to test relationships between traditional and non-traditional occupation groups. One-way analysis of variance (ANOVA) tests were conducted to determine whether there were any significant differences between individuals classified as feminine, masculine, androgynous, or undifferentiated on the results from the CDQ and the self-estimate of risk.

Qualitative Analysis. Interview responses were recorded by audio-tape and by brief hand-written notes. Tapes were reviewed, and additional notes were taken to confirm relevant content and provide sample quotations. Comparisons between taped conversations and interviewer notes were made to verify hand-written comments.

From the verified written notes, lists and charts were compiled to categorize and compare participants' responses for each question. Lists of responses were developed for each career subgroup. Themes arising from the responses were collected by a coding procedure to develop preliminary categories.

The coding of responses involved the development of hypothetical response categories, examination of the responses, refinement of categories, and further examination of the responses to place them in the appropriate category (Orenstein & Phillips, 1978). A total of four coding procedures were conducted by one coder, over a period of 18 months, to confirm and finalize the categories, themes, and comments arising from the interview questions. The degree of accuracy in the replication of coding was satisfactory with estimates of agreement ranging from .92 to 1.0 (Borg & Gall, 1983).

## Chapter IV.

### RESULTS

This chapter presents an analysis of the results from three sources: the demographic profiles; measures of risk-taking (CDQ) and sex-role orientation (BSRI); and personal interviews. Demographic characteristics are analyzed, using chi squares and t-tests, as appropriate, to describe the sample and provide a comparative framework for discussion of inventory and interview results. The research questions are then restated with findings presented for each question. Sample quotations are included to highlight the results. To assure confidentiality, letters of the alphabet were assigned to replace names of the participants. The chapter concludes with a summary of the research findings.

#### Demographic Characteristics of Participants

Of the 44 study participants, 22 were engaged in traditional occupational fields and 22 in non-traditional occupations as defined by Employment and Immigration Canada (1984). Table 1 summarizes the demographic characteristics of participants and demonstrates differences between the two groups.

Occupation groups were found to differ significantly in number of children, employment status, and personal income. Women in the traditional group reported a significantly greater number of children than women in the non-traditional group ( $t(42) = 4.39, p < .001$ ). A significant relationship was supported

Table 1

Demographic Characteristics

Characteristic		Traditional (22)	Non-Traditional (22)	Total (44)
Age	M:	39.1	36.7	37.9
	<u>SD:</u>	9.12	9.05	9.05
Children	M:	2.23	0.50	1.36
	<u>SD:</u>	1.60	0.91	1.56

  

	Frequency	Percent	Frequency	Percent	Frequency	Percent
Living status						
With partner	17	77.3	13	59.1	30	68.2
Single	2	9.1	7	31.8	9	20.5
With friend or parent	1	4.5	2	9.1	3	6.8
With children	2	9.1	0		2	4.5
Employment status						
Full-time	4	18.2	19	86.4	23	52.3
Part-time	3	13.6	1	4.5	4	9.1
Unemployed	8	36.4	0		8	18.2
Homemaker	5	22.7	0		5	11.3
Student	2	9.1	2	9.1	4	9.1
Personal income						
No income	3	13.6	0		3	6.8
\$0 - \$10,000	10	45.5	2	9.1	12	27.3
\$10,000 - \$20,000	4	18.2	5	22.7	9	20.5
\$20,000 - \$30,000	1	4.5	6	27.3	7	15.9
\$30,000 +	1	4.5	9	40.9	10	22.7
No response	3	13.6	0		3	6.8
Education completed						
Incomplete High School	2	9.1	2	9.1	4	9.1
High School	8	36.4	5	22.7	13	29.5
Vocational/College	3	13.6	4	18.2	7	15.9
Undergraduate degree	7	31.8	6	27.3	13	29.5
Graduate degree	2	9.1	5	22.7	7	15.9

between employment status and occupational field ( $\chi^2 (7, N=44) = 26.12, p < .001$ ). More women in the non-traditional field were engaged in full-time employment (86.4%) than women in the traditional field (18.2%). All women who were either engaged in full-time homemaking or unemployed (59.1%) were in the traditional group. A significant relationship was found between personal income levels and occupation group ( $\chi^2 (5, N=44) = 21.42, p < .001$ ). A large percentage of women in non-traditional occupations earned in excess of \$30,000 (40.9%) whereas the majority of women in the traditional group earned less than \$10,000 or had no income (59.1%). There was no evidence of significant differences or relationships between the two groups with respect to age, living status, or levels of education completed.

The differences between the two groups appear to relate more directly to activity than to personal characteristics. When homemaking is considered a primary work activity, the differences with respect to childrearing and employment status are to be expected. For women active in the labour market, the non-traditional group was engaged in greater full-time employment (19 out of 20). The traditional group reported higher unemployment and part-time work (11 out of 15).

Women in non-traditional occupations also fared significantly better in terms of income than women engaged in

traditional work. Of women reporting income, 68.2% of non-traditional incomes were in excess of \$20,000 per year, compared to only 9.0% of traditional incomes. The national average income for women in 1986 was \$12,615. The findings lend support to the statistics indicating higher income levels for women in non-traditional occupations.

### Research Questions and Results

1. How do women define and experience risk-taking in their lives? Do women define and experience incidents of risk-taking in terms of instrumentality or affiliation, or both? Or, is risk-taking described in terms other than instrumentality and affiliation?

#### A. Definition

Each of the participants was asked to think of risk-taking in her own life and to state what would be her personal understanding or definition of the term. The findings are described in two distinct ways: Four themes which emerged from words or brief phrases repeated by many women are presented and a variety of metaphors, or word-pictures, mentioned by participants are included to enhance the definitions of risk-taking.

The theme most frequently mentioned (20 responses) was that risk-taking involved an element of unpredictability or uncertainty regarding the outcome:

T: That's hard to answer. You can't predict. Sometimes

you just don't know. It's like getting married, depending on the other person for things and needs; they may not be met.

In several definitions the risk-taking event or action itself was not the significant factor. Rather, as W. stated: "it's not knowing what will evolve" from the action that was of central concern.

The uncertainty of daily life was described by two women:

D: Life is risk. It's the story of my life. The emotional, physical, financial; all fit together for me. There are levels of uncertainty where you just don't know the outcome.

C: Risk-taking is when the outcome is unknown in a situation and you take a route of action. Like the course of life. It's serious with life, marriage, career. It's different from sports.

The emphasis on an element of unpredictability suggests that the risk action or behaviour cannot be separated from the outcome and the relationship of the risk to the person's life context.

Fourteen women identified an emotional element involved in risk-taking. This second major theme was referred to by B:

When you go into something you run the risk of physical and emotional types of hurt. I married my first husband knowing he wasn't going to live. It was emotionally very hard but there

were things happening that made it worth it.

The emotional connection to risk-taking was often described as involving strong feelings, such as fear:

D: In taking a risk there's fear for sure. It's a real emotional response that's hard to go through.

Other women described the emotional response as a range of feelings including: "it's hot and cold. If not, there's something missing"; both "tangible and intangible"; and as something that "we don't really know--logically. There's an exuberance quality to it."

The element of emotional involvement was described, not simply in positive or negative terms, but as a complex and fundamental aspect of risk-taking. One woman captured this complexity in her definition of risk:

B: For me, it's pushing my own limits of comfort-- emotionally, sexually, politically, and socially. We need to risk to better our lives emotionally and socially, not just materially. It's not win or lose, it is fundamental.

The theme of loss as an element in risk-taking emerged as a factor in another 14 responses. The loss was specified in a variety of ways including: loss of personal or financial security; loss due to potential harm to self and/or others; and loss of reputation, esteem, or career. The interplay of potential loss and gain mentioned by several women is exemplified

by K's comment:

Risk-taking is any situation where your path or choice can lead to some loss or the possibility for bettering the decision. It has a big effect.

Women in non-traditional careers were particularly concerned with the element of loss and identified this theme in 10 of their 14 responses. Loss of success or credibility was a concern:

L: Risk-taking is a situation where you could jeopardize your success achieved to this point. It's not only financial, it's also personal.

N: Risk-taking involves putting yourself on the line; your reputation and credibility. It's baring yourself. You're wide open to criticism and rejection.

The theme of loss was also associated with potential harm or danger to self, others, or things:

C: Risk-taking is what might cause loss or injury - It can be financial or physical danger. A decision that is devastating, that can destroy the environment or relationships.

The fourth theme, present in 13 responses, was the view of risk-taking as a change process involving new experiences and an expansion of personal norms or boundaries. The process was seen as an essential element in personal growth and development:

P: Risk-taking is stepping outside the bonds of the norm

that is set by each individual.

I: It's to step outside the everyday, secure world. What was comfortable becomes uncomfortable then another step is required. Boundaries change as we grow and hopefully expand.

G: Risk-taking is not a listing of pro's and con's, not weighing out of things. It is a process; the whole thing, considering everything involved. Even worrying about it is part of the process.

The four themes that participants identified contributed to a definition of risk-taking that connects elements of uncertainty regarding the outcome, emotional involvement, loss, and a process of change. These themes appeared to be interrelated and suggested a highly personal response to risk-taking that was experienced as a process, and not as an isolated event or incident.

This section concludes with metaphors used by participants as they sought to describe their personal understanding of the term. These metaphors enhance the descriptions and are included to highlight the personal nature of risk-taking:

Risk-Taking is ...

I: stepping outside the everyday secure world

S: jumping off the fence

T: stepping into uncharted ground

- N: putting self on the line
- E: stepping out; trusting my intuitive self, following my heart
- C: a leap of faith
- R: being on the edge of the abyss
- C: the course of life
- M: going out on a limb without something to fall back on; you can't step back
- S: going against the grain
- L: a leap, a death.

These metaphors, cited by several of the participants, contain images of personal challenge and an expansion of personal limits beyond what may be familiar. These images support the themes that emerged in the definitions of risk-taking provided by participants.

#### B. Incidents of Risk-Taking

To identify incidents of risk-taking relevant to women's experience, each participant was asked to describe approximately five examples of meaningful risk-taking situations, and to specify what felt 'at risk' to her in each of the situations. The 44 participants identified a total of 240 incidents. Each woman was also asked to identify up to 5 incidents where she decided to not take a risk. Fewer incidents were specified as risks avoided for a total of 71. Summary categories of risks taken and not taken are detailed in Tables 2 and 3.

Table 2

Risks Taken (N = 240, # Participants = 44)

Risk Category	Traditional	Non-Traditional	Total
Career/Employment	26 (23%)	57 (44%)	83 (35%)
Job confrontations/responsibilities	4	26	30
New, or return to, work	8	18	26
Self employment	6	8	14
Loss of employment	8	5	13
Interpersonal/Relationship	36 (33%)	34 (26%)	70 (29%)
Marriage, entering relationship	11	15	26
Divorce, leaving relationship	8	7	15
Childbirth, childrearing	10	3	13
Challenges with family of origin	4	6	10
Challenges with partner, others	3	3	6
Education: New, or return to	12 (11%)	13 (10%)	25 (10%)
Personal Risks	16 (15%)	4 (3%)	20 (8%)
Personal growth, counselling	14	3	17
Being on own	2	1	3
Relocation Risks	8 (7%)	4 (3%)	12 (5%)
Other Risks	12 (11%)	18 (14%)	30 (13%)
Travel	3	5	8
Financial	1	6	7
Physical Adventure	2	3	5
Driving	4	1	5
Medical Health	1	3	4
Legal	1	0	1
<b>TOTAL RISKS</b>	<b>110 (100%)</b>	<b>130 (100%)</b>	<b>240 (100%)</b>

Table 3

Risks Not Taken (N = 71, # Participants = 32\*)

Risk Category	Traditional	Non-Traditional	Total
Career/Employment	5 (12%)	12 (32%)	17 (24%)
Change in career/job	3	10	13
Job confrontations, responsibilities	2	2	4
Interpersonal/Relationship	17 (52%)	9 (24%)	26 (37%)
Marriage, enter relationship	2	6	8
Divorce, leave relationship	2	1	3
Childbirth, safety of children	5	1	6
Challenge family of origin	4	0	4
Challenge partner, others	4	1	5
Education: Return or continue	3 (9%)	6 (16%)	9 (13%)
Personal Risks:	2 (6%)	0	2 (3%)
Relocation Risks:	1 (3%)	2 (5%)	3 (4%)
Other Risks:	5 (15%)	9 (24%)	14 (20%)
Travel	2	1	3
Financial	2	3	5
Physical Adventure	1	4	5
Driving	0	1	1
<b>TOTAL RISKS NOT TAKEN</b>	<b>33 (100%)</b>	<b>38 (100%)</b>	<b>71 (100%)</b>

\* 12 participants reported no risks not taken.

The results from Table 2 indicate that women described significant risk-taking incidents that were personal and connected to their life experience and context. From a total of 240 risks: 35% related to career and employment, both paid and unpaid; 29% were risks that were interpersonal in nature; 10% concerned education; and 8% involved risk-taking related to personal growth. The remaining 18% described a variety of risk-taking experiences including relocation, financial concerns, travel, adventure, health, and driving.

The findings from Table 3 are compatible with the descriptions of risk-taking detailed in Table 2. The same categories of risk apply to both risks taken and avoided, suggesting that the categories are adequate in portraying a comprehensive view of risk-taking described by participants.

In the sections that follow, each category of risk-taking from Table 2 is examined and highlighted by quotations from the participants.

Career/Employment Risks. A total of 83 incidents of risk-taking were related to career and employment. The women in non-traditional occupations emphasized this category of risk-taking, identifying 57 incidents (44%). This group also placed greater emphasis on career/employment risk-taking than did the women in traditional occupations, who described 26 incidents (23%). This finding is consistent with the significant differences found in

both employment status, and number of children: women in non-traditional occupations were engaged in greater full-time employment; and women in the traditional occupation group were engaged more fully in childrearing.

An interesting difference appeared between the two groups in the number of reported incidents of confrontation and taking on responsibilities at work. Women in non-traditional occupations described a greater number of incidents requiring risk-taking on the job (26). A woman who worked in the construction industry described the following example:

N: I face risks daily in my job. I'm on the line, it's an everyday thing. Being in control of my own division, I either sink or swim. If I screw up, it's on my shoulders. What we hear of women in the workplace is misguided; it's more than getting equal pay. I'm on the job site to do a job and some men get their backs up and I have to co-operate with them. There's some tough general contractors who try to scare you as a woman more than they would to men. I'm not a rookie; if push comes to shove, I'll shove back.

Accepting new responsibilities at work was described by many women in non-traditional careers, such as this example by R., who worked in trade show management:

My boss asked me to take on being general manager for a new international trade show. I did it from scratch with no

experience. I had to hire a secretary; I was scared in the interview. I set up an office. All were new areas, new risks. What was at risk is I didn't know if I could do it. Each time I built some confidence and realized my career must be exciting.

Returning to work after several years absence was also a major risk-taking experience. B., who returned to work after raising three children, reported that her risk-taking had decreased during her time at home:

People don't have a lot of respect for being 'just a Mom' and staying home. And then I started imposing those feelings on myself and feeling not intelligent. It's a constant whenever I go out. And that adds to that sense of being smothered as a mother. As I go back (to work) I have to expose myself and say 'I don't know' and be open to learning. And that's hard for me to do. I had worked long enough before that I had mastered the basics and it's threatening to go back and start again.

Searching for, and accepting, a new job was also identified as risk-taking. One woman, after running her own business for several years, lost the company due to unpaid contracts and was forced to re-establish her career goals:

S: I decided to ask a peer for a job at another company. I hadn't worked for anyone else in a long time. I was

scared and kept my mouth shut. I didn't want to intimidate others. I just did what was asked and worked to gain the respect of fellow employees. Now I've worked my way up, as the men did, learning on the job. I'll try to do most anything.

A loss of employment, either chosen or forced, was cited 13 times. It was viewed as significant to both occupational groups. M. described the risks to her career advancement, sense of achievement, and financial security in choosing to quit a job:

I walked out of a fulfilling job in Edmonton doing advertising layouts. I helped to make the magazine a success. But there were unethical pressures compromising my principles. I said 'No, I'm going to do it and do it now.' It was more risky to stay, for my values and integrity. It was do or die.

The demands of being forced out of a job, due to an economic slowdown, became the greatest risk N. reported taking in her life.

Losing my job as a supervisor after nearly 20 years was the biggest of all. I had to deal with my own self-confidence and I lost financial stability. The adjustment was a big risk. I had to face mental depression and build emotional stability to deal with it. I had to learn how to compete and then retrain for employment. It forced me to increase

my risk-taking in the last four years; some have been forced, others chosen. I've made a better person of myself.

A final example of risk-taking related to career and work cited by participants was the risk of self-employment or starting a business, either individually or with a partner. G. described taking a risk to work with her husband:

I got involved with my husband's business. It put pressure on our personal relationship; that was the risk, not so much the work itself. I had to have the hammer, had to pressure him. It was financial ... I got involved to organize the money. The outcome was good; the money got better and it evened out our dynamics, me not being the bully and him not sliding away.

Interpersonal/Relationship Risks. Second only to the incidence of career/employment risks, the participants reported a significant number of risk-taking incidents that related to relationships with others, including partners, family members, children, and friends. A total of 70 interpersonal risks were described, 29% of the total response. While equally significant to women in both traditional (36 responses) and non-traditional (34 responses) occupations, this category accounted for the largest percentage (33%) of risk-taking incidents described by women in the traditional cluster. Risks of entering and leaving

relationships with intimate partners (including marriage and divorce) was given greatest emphasis, accounting for 41 of the 70 responses.

A variety of risk factors emerged as women considered marriage or beginning an intimate relationship including; loss of personal and/or financial independence, loss of identity and name, loss of credibility with institutions such as banks, and loss of emotional well-being. N. detailed many of these risk factors as she recalled her decision to marry:

Marriage is always a risk, both to get (married) and to stay in. I have to work at it to stay with it. It is a singles society, I was a threat to my friends. At risk was my independence and financial independence. Even credibility with the bank. It's not so much freedom; my marriage is flexible, but I lost some flexibility. There's some loss and some gain.

For women who had experienced more than one intimate relationship, or marriage, the risk-taking was divided between entering and leaving the relationships. In the experience of S., the risks began to escalate:

I divorced when I was 28 and wasn't sure where I would go. I got into another relationship and remarried soon.... I backtracked and took a second seat to my husband. It was like I became a different person. It was hard to deal with.

I divorced 7 years later, I wanted out of the same patterns.... I remarried for a third time and moved onto a farm. I ran the farm ... I had no support, I was new to Alberta. My friends and family backed off. I was very alone and felt drowned... I had a sense of a problem but not knowing where to go. That was five years ago.... Then there was a switch. (I began to feel) I'm right, I'm not stupid, I need changes.

For S., the "switch" came when she recalled the trauma of incest abuse as a young child which led her into seeking counselling assistance.

Taking the risk to begin a relationship, separate from marriage, was significant for many women. The two experiences that follow are different, yet each woman described similar feelings of emotional vulnerability:

K: I took a chance to get emotionally involved after being hurt in a previous relationship and swearing off men.... My emotional well-being was at risk and the fear of being hurt and of trust.

J: Last year my risk-taking was on an emotional level. I told another woman I loved her. She responded. It took courage.... It has to do with who I am, my sexual identity. Opening up to face that in myself and not be afraid of it.... There's a change in my risk-taking from physical to emotional. I am re-examining old scripts.

Risk-taking to leave a relationship or to divorce was mentioned in 15 responses. They described risking financial stability, the support of friends and/or family, and the insecurity of an uncertain future:

T: Three years ago I decided to separate from my husband. I was supporting him emotionally at the time.... I had support from friends and God, but I didn't know if I could support myself. I hadn't worked for a long time. At the same time I had to struggle to keep the house, it was in foreclosure.

Another woman, who divorced after 25 years of marriage, described the risks of starting a new life on her own:

N: To go out on my own and start new relationships. How would I be accepted in public? I was older. There are different standards and moral accountability. I didn't know if people would make judgements.

For yet another woman, the risk involved in leaving her marriage was described briefly, yet powerfully:

O: I was left with nothing. My kids stayed with my husband. I resent the lost time with the kids. In the teen years we grew apart.

The decision to have and raise children was significant in 13 responses. For W, the decision felt particularly complex because it involved the influences of other people as well as her own struggle:

W: The biggest (risk) was to have children and have them early. It was a choice between school and career or kids. I wanted to be young with them. Yet I was not yet grown up myself. My friends were putting off having families and my husband was not too sure about it.

Ten incidents of risk-taking were related to challenges or confrontations with family of origin members. For B., the risk-taking involved the disclosure of her sexual orientation:

Coming out to my mother is the risk-taking I want to talk about. It was verbalizing what we both knew. The risk was to verbalize it. I felt 99% certain that she'd be OK. But even if I didn't know the outcome it was time to be honest with myself. Even if she rejected me, it was important for me to do to be honest. Honesty was the principle and the risk. The outcome; Mom was supportive. It was the beginning of a more positive relationship. It had great meaning to it--high risk--her possible rejection and verbalizing who I am to someone.

For S, the risk involved confronting her father who had sexually abused her, repeatedly, as a child:

I went home this summer and confronted Dad about the abuse. I had some pity for him. When I told my sisters I was met with silence. They said 'no--let it be.' But it was my need and anger to share it. His response was 'it's all in

your head, not my fault, I'm old and sick.' He hugged me when I left.... I realized I can't make changes there, but I can deal with it. It lightened my load. I'm realizing the validity in my own being, that I am O.K.

Another type of interpersonal risk-taking described in six responses, involved challenges or confrontations with partners, friends, or other people. One woman confronted her husband who had become addicted to a medication:

O: I took pills away from my husband. He had an ear infection and was very ill. I threw them away. He was risking his health and his life. He was hooked on them. I asked myself 'should I do this'? What was at risk was fighting with myself and fighting with him, but I was in fear for his life.... He got better in a few months.

Developing relationships with other people was viewed as important by D., who had lived and worked for many years on a remote farm. She described the changes in her risk-taking after a move into the city:

It's risky to be in the city, it was safe in the country. I now take risks in interpersonal relationships, getting to know people. It's different with animals, things seem clear with 600 head of stock. You can deal with them as problem solving--it's physical. With people what's risky is the rejection and hurt other people can inflict on us. It's not

just myself. You can't control it and can't always problem solve.

Education Risks. Equally important to both occupation groups, risk-taking related to education or training was described 25 times, for a total response rate of 10%. A return to educational institutions to complete a course of study was considered a risk by several women, one of whom described her experience as follows:

G: Four years ago I chose to go into an M.A. program. It was the first and only time I've sat down to weigh the pros and cons. I had to consider whether I was avoiding the real world, and was it above my abilities. I decided to (go) because I can learn something here. So I went, then I got pregnant then married. The M.A. was low on my list, my focus was away from studies and I let it go for two years. My husband pressured me to finish and a professor convinced me. So I got back to it and finished.

The decision to return to school in order to upgrade academic standing after many years absence from formal education was also described as a major risk-taking event:

A: I went back to school for grades 8 and 9 together. I had always wanted to do it. Options for Women (a career counselling agency) motivated me. I had quit in Grade 8. I was told I was dumb, and went hairdressing. I want to go at

my speed. I'm willing to do it until it's right. My self-esteem is high now.

For some women, the decision to leave home for the first time to pursue education beyond high school presented a combination of risks, as described by R:

I left home in a small town to go to Mt. Royal for design. Women didn't do non-traditional work there, only teaching and nursing. I moved away from the mold of the community and can't go back. It's a loss. People think you've changed.

Personal Risks. Twenty incidents of risk-taking that involved personal challenges or change were reported. One woman described reaching a point in her life where she experienced a change in her understanding of herself:

H: Five years ago there was a change in my lifestyle and attitude. The kids had left, money wasn't needed. Looking back over, it was like I was waiting, feeling isolated, and living for others. There was a major shift into risk-taking and discovery of myself. It was noticeable and attached to being fed up with isolation and emptiness. I'm now going with my feelings and not waiting passive for others. It is exciting and scary.

Personal changes described as risk-taking were frequently linked to increased emotional understanding and expression of self:

C: I am now allowing strong feelings to come up and out. I'm choosing it more and more. It's creative. When it's denied it hurts to sit on it.... There's an assumption that risk is physical. I never put my body at risk, yet I risk. I'm a feeling junkie; wanting to push and risk in emotional situations, pushing emotional limits. There is a hunger for intensity. It requires risk-taking to break from the safe places.

Seeking counselling assistance for personal change and growth was reported by eight women who viewed counselling as a significant risk-taking process:

S: For me, it was going to Heritage House for counselling and acceptance of my incestuous family. I had no support from my family. I only got drugs from my psychiatrist-- there was no support from him. I was at a dead end. I had nothing to lose.

For three women, learning to live and to be on their own after marriage was yet another personal risk. L. described her experience following the death of her husband:

A big risk was survival without my husband. Being on my own, having to make decisions and take action all on my own, to make a new lifestyle and new friends. I went ahead. It was hard but I did it. There are new stages in my life, I have a whole new outlook on life.

Relocation Risks. Fourteen incidents of risk-taking concerned relocation to take a job, to accommodate a partner, or for personal reasons. I. described her sense of loss from moving twice in a short period of time:

I relocated to Edmonton in 1985. There was a lot to lose-- my job, my home, my friends. It was hard to find a new job. Also when I moved from England to Toronto I had no money and no job.

Other Risks. Thirty (13%) of the total responses described a variety of risk-taking incidents that related to travel, financial investments, physical adventure activities, health, driving, and a legal challenge. Travel, particularly travelling alone, was mentioned in eight responses. One example follows:

J: I've travelled a lot in out of the way places, some on my own. It's not that dangerous, but it is adventurous. I got a new perception of what I could do and new skills. I got to know people.

Seven incidents of financial risk-taking included major purchases such as a house or car, investments and stock market speculation, and lending money:

M: I lent money to someone. It was a single mom and I knew I might not get it back. The money was at risk.

C: Right now I'm buying company shares; that's personal. And also a joint risk with my husband to buy a house. Money

is at risk and also trusting him to invest; our relationship is at risk.

Adventure pursuits were cited in five responses and included skydiving, rockclimbing, sailing in storm conditions, ski jumping and skiing. One example portrays the risk-taking involved in skydiving:

E: I learned to skydive. I just wanted to do it. It was scary and beautiful. I would do it again. My safety was at risk, but it didn't seem risky or an issue until I was out on the wing strut.

Risks involving medical or health concerns were reported by four women, one of whom described a difficult decision:

K: I decided to have elective surgery - just to have it done. It was a choice of health and life, or death on the operating table. I had fears of a general anesthesia, or if not, then possible cancer.

Risk-taking that involved automobile safety and driving was reported five times. The risks included learning to drive, driving under severe weather conditions, and driving at night alone or with children:

I: I took driving lessons 8 years ago and started to drive this summer. It was scary and driving on my own is still frightening. But it's now 90% overcome and I'm driving at night, but not in foul weather. The risk is a fear of accidents, of hurting someone.

The category of 'other risks' included a total of 30 responses, or 13% of the total response. Only 12 responses, 5% of the total, described physical adventure and financial risk-taking. Games of chance, gambling, the use of addictive substances, and team sport activities were not mentioned. Yet these situations were assumed to represent risk-taking in previous research that used hypothetical dilemmas or laboratory experiments to measure risk-taking tendencies.

2. Is there a relationship between sex-role orientation as measured by the Bem Sex-Role Inventory and risk-taking as measured by the Choice Dilemmas Questionnaire and by a self-estimate of risk scale?

The BSRI was used to measure the degree to which participants classified themselves as having either more traditionally feminine stereotypical qualities or as having more traditionally masculine stereotypical qualities. Using a split median technique, respondents were classified as feminine, masculine, androgynous, or undifferentiated. The results indicate that 29.5% of participants were classified as feminine, 29.5% as masculine, 23% as androgynous, and 18% as undifferentiated.

The CDQ was used to measure levels of risk-taking based upon responses to 12 hypothetical situations in which participants selected a level of risk involvement. Forty-two participants

responded, producing a mean score of 56.95 and a standard deviation of 14.17. The summary of results from the CDQ according to sex-role classification on the BSRI is presented in Table 4.

Table 4

Comparison of CDQ Results By Sex-Role Orientation

BSRI Classification	Frequency	CDQ Mean	SD
Feminine	13	58.31	12.83
Masculine	12	54.00	14.00
Androgynous	9	58.44	17.30
Undifferentiated	8	57.50	14.92
Total	42	56.95	14.17

One-way analysis of variance was conducted to test the null hypothesis that there would be no significant difference among groups assigned by sex-role orientation on mean scores obtained on the CDQ. The results are summarized in Table 5.

Table 5

ANOVA Analysis of CDQ Results by Sex-Role Orientation

Source	df	SS	MS	f	p
Between groups	3	150.91	50.30	0.24	.87
Within groups	<u>38</u>	<u>8082.99</u>	212.71		
Total	41	8233.91			

$$F_{.05}(3,38df) = 2.85$$

With an obtained F value less than 2.85, the null hypothesis was retained. No significant difference was found among the subgroups on mean scores of risk-taking measured by the CDQ at the 0.05 level of significance.

In addition to responding to the CDQ, participants were asked to rate themselves on a 7-point scale as a measure of self-estimated risk-taking. Forty-one participants responded, producing a mean score of 5.20 and a standard deviation of 1.12 as summarized in Table 6.

Table 6

Comparison of Self-Estimate of Risk by Sex-Role Orientation

BSRI Classification	Frequency	Self-Estimate Mean	SD
Feminine	11	5.55	1.37
Masculine	12	4.92	1.16
Androgynous	10	5.50	0.71
Undifferentiated	<u>8</u>	4.75	1.04
Total	41	5.20	1.12

Again, one-way analysis of variance was conducted to determine whether significant differences existed among the four subgroups on the self-estimate of risk. The null hypothesis stated that there would be no significant difference among subgroups on mean scores obtained on the self-estimate of risk scale. Results are presented in Table 7.

Table 7

ANOVA Analysis of Self-Estimate of Risk by Sex-Role Orientation

Source	df	SS	MS	f	p
Between groups	3	4.80	1.59	1.29	.29
Within groups	<u>37</u>	<u>45.64</u>	1.23		
Total	40	50.44			

$$F_{.05}(3,36df) = 2.86$$

Again, with an obtained F value less than 2.86, the null hypothesis was retained. No significant difference was found among any two groups assigned by sex-role orientation on self-estimates of risk-taking at the 0.05 level of significance.

3. Is there a relationship between career orientation that is either traditional or non-traditional and risk-taking as measured by the Choice Dilemmas Questionnaire and by a self-estimate of risk scale?

The risk-taking of participants was further investigated by comparison between the two occupational groups on mean scores obtained by each group on the CDQ and the self-estimate of risk scale. It was hypothesized that women in non-traditional occupations would score significantly higher on these two measures of risk-taking than women in traditional occupations.

The results from completion of the CDQ are summarized in Table 8.

Table 8

Comparison of CDQ Results by Career Orientation

Career Orientation	Frequency	CDQ Mean	SD
Traditional	22	59.95	11.96
Non-Traditional	20	53.65	15.92
Critical $t_{.05(40)} = 2.02$		obtained $t_{.152(40)} = 1.46$	

With an obtained  $t$  value less than 2.02, no support was found for any significant difference between traditional and non-traditional groups on mean scores of risk-taking measured by the CDQ. The results from the self-estimate of risk scale are summarized in Table 9.

Table 9

Comparison of Self-Estimate of Risk by Career Orientation

Career Orientation	Frequency	Self-Estimate Mean	SD
Traditional	20	5.15	1.23
Non-Traditional	21	5.24	1.04
Critical $t_{.05(39)} = 2.02$		obtained $t_{.81(39)} = -0.25$	

Again, with an obtained t value less than 2.02, no support was found for any significant difference between the two occupational groups on self-estimates of risk-taking.

4. Is there a relationship between career orientation that is either traditional or non-traditional and sex-role orientation as measured by the Bem Sex-Role Inventory (BSRI)?

The two occupational groups were analysed for differences in sex-role orientation. It was hypothesized that women in non-traditional occupations were more likely to be classified as masculine or androgynous, while women in traditional occupations were more likely to be classified as feminine on the BSRI. The crosstabulation of BSRI categories by occupational group is summarized in Table 10.

Table 10

Crosstabulation of Sex-Role Orientation by Career Orientation

<u>Sex-Role Orientation</u>	<u>Frequency</u>		<u>Total</u>
	<u>Traditional</u>	<u>Non-Traditional</u>	
Feminine	11	2	13
Masculine	2	11	13
Androgynous	4	6	10
Undifferentiated	<u>5</u>	<u>3</u>	<u>8</u>
Total	22	22	44
Critical $\chi^2(3) = 7.82, p < .05$		Obtained $\chi^2(3) = 13.36, p < .01$	

With an obtained chi square value greater than the critical value of 7.82, support was found for the hypothesis. It was concluded that a significant relationship was supported between sex-role orientation and occupation. A significantly greater number of women in traditional occupations were classified as feminine on the BSRI and a significantly greater number of women in non-traditional occupations were classified as masculine on the BSRI.

5. Does involvement in the study affect participants' knowledge and estimation of self?

Participants were asked, in interview question nine, to comment on their reaction to the CDQ as a measure of risk-taking. The question was designed to generate self-reported information on the relevance of the CDQ and to actively involve participants in the research process. It was hypothesized that participants would report an increase in knowledge and understanding of risk-taking. The results were similar for both occupational groups and are reported on the overall response from 40 of the 44 participants: Thirty (75%) of the women indicated a negative reaction to the inventory; 6 (15%) of the responses were positive; and 4 (10%) were neutral.

Most of the responses contained several comments about the CDQ. A total of 115 negative comments were recorded. The following statements were developed to summarize the comments:

1. The dilemmas do not provide enough information about the people, situation, or context (33%).

2. The CDQ is not relevant to, or reflect, my life, interests, or style of decision making (18%).

3. It is not possible to choose for others. The important factor is what course of action is appropriate for the person at risk (17%).

4. The CDQ is too rigid, simplistic, or black and white (13%).

5. The CDQ measures political values and ethics more than risk-taking (12%).

6. The CDQ is out of date, sexist, and/or biased (7%).

The six women who responded favourably to the CDQ provided 12 positive comments including: it was possible to relate to, at least, some of the situations (6); the CDQ was enjoyable (4); and the variety of situations was good (2). All four women who reported a neutral reaction provided the similar comment that they answered according to how they would behave in the situation.

The affect of involvement in the research design on participants' knowledge and estimation of self was also explored in interview question 10. Participants were asked if their involvement in the research affected their understanding of risk-taking in any way. Forty-one women responded to the question: 30 (73%) answered 'yes'; 7 (17%) answered 'no'; and 4 (10%) of the women were uncertain.

Of the 30 women who reported a change, 29 described their involvement as positive, with the following effects: increased self-awareness and confidence (12); a clearer understanding of risk-taking as a process in daily life (10); increased appreciation of the value and number of risks taken (7); and new ideas about risk-taking (7). One woman stated that the effect of the research was discouraging; it reinforced her sense of herself as someone who didn't like to take risks. Seven women reported no change in their understanding of risk-taking; they described themselves as being risk-takers throughout their lives. Four participants felt uncertain about changes in their understanding of risk. They cited feeling "puzzled," "uncertain," or "increased in self-awareness, but not risk-taking."

At the conclusion of the interview, participants were asked to suggest how the research might prove useful. Recommendations for counselling included use of the results in depression management, alcohol treatment, self-esteem and career/life planning programs. Research recommendations included further critique of established tests and inventories, similar research with male participants, and analysis of the counselling process as a risk. Recommendations for use of the results in education included consciousness raising, challenging stereotypes, teaching young girls about non-traditional careers, and writing a book about women's risk-taking.

### Summary of Results

This study proposed that an exploration of women's risk-taking behaviour would expand narrowly defined assumptions found in previous research that have emphasized the dimension of instrumental risk-taking. The results of the data analyses supported this position.

Definitions of risk-taking provided by participants identified four related elements: a degree of uncertainty about possible outcomes; emotional, as well as intellectual and physical involvement; the risk of potential loss; and a view of risk-taking as a personal and fundamental change process, rather than an isolated event.

Categories of risks taken by participants were: career and employment (35%); interpersonal and relationship (29%); education (10%); personal (8%); relocation (5%), and other (13%). The examples of risk described by participants demonstrated that women actively engaged in risk-taking that was linked to their personal life context and that involved both personal and interpersonal considerations.

Significant differences in demographic characteristics were found between the traditional and non-traditional occupation groups in number of children, employment status, and income level. Women in traditional occupations had a greater number of children, and reported higher unemployment. Women in non-

traditional occupations were engaged in more full-time employment and reported significantly higher levels of personal income. No differences were found between the two groups with respect to age, education, and living status.

Analyses were conducted to investigate differences between groups regarding differences in risk-taking behaviour. No significant differences were found between occupation groups on risk-taking tendency measured by two scales; the Choice Dilemmas Questionnaire and a 7-point self-estimate of risk scale. Participants were also divided into four sub-groups according to sex-role orientation measured by the Bem Sex-Role Inventory. Again, no significant differences were found between women classified as feminine, masculine, androgynous, or undifferentiated on risk-taking tendency measured by the CDQ and the self-estimate of risk scale.

An analysis was also conducted to investigate the relationship between career orientation and sex-role orientation. A significantly greater number of women in traditional occupations were classified as feminine on the BSRI. A significantly greater number of women in non-traditional occupations were classified as masculine on the BSRI. It appeared that sex-role orientation and career orientation were related.

The structure of the interview was designed to actively involve participants in the research. Participants were asked to

evaluate the CDQ, to describe changes in their understanding of risk-taking as a result of participation in the research, and to recommend uses for the research results. Participant reaction to the CDQ was predominantly negative (75% of total response).

Women criticized the inventory for a lack of contextual information and relevance, rigidity, bias, and assumptions regarding the estimate of risk-taking based upon recommendations to other people and the existence of concrete solutions to complex human dilemmas. Participants also reported that their involvement in the research contributed to an increased understanding of risk-taking and self-knowledge. Seventy-three percent of the participants reported the following affects: increased self-awareness or confidence; new or increased understanding of risk-taking as a process; and an increased appreciation of the value and number of risks taken.

Recommendations for use of the results included applications for counselling, research, and education.

## Chapter V.

### DISCUSSION

Feminist scholars (Eichler, 1980; Gilligan, 1986; Lerman, 1987) have identified the need for social and psychological research to evaluate, revise, and expand established theory by exploring behaviour from the perspective of the individual within a social context. The purpose of such inquiry is to correct misrepresentations of women's development and to provide new insights into behaviour that are grounded in women's lived experience.

The present study was based upon this feminist approach. Modelled after the work of Carol Gilligan (1982), who forced a re-examination of moral development theory (Kohlberg, 1958, 1981), this research has re-examined the theory related to risk-taking behaviour. The question 'How do women experience risk-taking?' was investigated by analysing definitions and examples of personal risk-taking described by 44 women, and by comparing relationships between subgroups assigned by occupation and sex-role orientation.

Gilligan (1982) argued that we have not heard the stories of women in their own voices. The purpose of this study has been to explore risk-taking in women's lives and to infuse that exploration with the contribution of women's own stories and voice. This chapter presents a discussion of the research

findings, limitations, and implications.

### Discussion

In asking participants to define and describe incidents of risk-taking, it was hypothesized that a broader understanding of risk-taking might emerge. The interview questions explored whether the participants described risk-taking in terms of affiliation and/or instrumentality. The dimension of affiliation refers to behaviour directed at the maintenance of relationships, concern for and attachment to others, and co-operation (Bem, 1978; Miller, 1976; Parsons, 1955). The dimension of instrumentality describes behaviour directed at attainment of individual goals, mastery, individuation, and competition (Parsons, 1955). It has been suggested that the psychology of risk-taking has developed with emphasis on a one-dimensional model of instrumentality and cognitive functioning (Brehmer, 1987; Kogan & Wallach, 1964; Sweeney, 1985). This focus has overlooked the dimension of affiliation and emotional involvement (Brehmer, 1987; Siegelman, 1983; Sweeney, 1985).

Results of the study suggested that there is support for a new model of risk-taking that incorporates both the dimensions of affiliation and instrumentality. The categories of risk-taking described by participants included career/employment, education, interpersonal/relationship, personal, relocation, and other risks including travel, financial, physical adventure, driving, health,

and legal risks. These risk-taking categories have been classified as affiliative, instrumental, or both. Risk-taking designated as affiliative in nature included the categories of interpersonal/relationship risks and personal growth risks. Risk-taking designated as instrumental in nature included the categories of career/employment, education, and other risks. Risk-taking designated as both affiliative and instrumental in nature included the category of relocation risks because the relocations involved either the attainment of personal goals or the accommodation of the needs of a partner. Of the 240 incidents of risk-taking described by the participants, 38% are classified as affiliative, 57% as instrumental, and 5% as relocation risks involving both affiliative and instrumental factors. The findings support the thesis that women describe significant experiences of risk-taking within the dimension of affiliation (relationships and attachment to others) as well as within the dimension of instrumentality (the achievement of individual goals).

In proposing a model that describes women's risk-taking as both affiliative and instrumental, it must be understood that these dimensions are incomplete descriptors of the complex and personal nature of risk-taking behaviour. The dimensions are not mutually exclusive, nor are they opposing and contradictory. The examples provided by the participants were neither totally

affiliative nor totally instrumental. Elements of instrumental motivation and behaviour were evident in risk-taking classified as affiliative. The risk-taking of S., in confronting her father for sexually abusing her, demonstrated both a concern for him and her family, and for the attainment of her personal goal of individuation. Elements of affiliation were found in risks classified as instrumental. When G. began to work with her partner in his business, both the relationship with him and the financial success of the business were at risk. The dimensions interrelate. Women actively engaged in risk-taking that spanned both dimensions: they risked the maintenance of interpersonal relationships and the attainment of personal goals.

The results of this research suggest that risk-taking is both affiliative and instrumental in nature. These dimensions were used to conceptualize risk-taking behaviour and motivation, and to present support for the argument that the majority of research, to date, has overlooked the affiliative aspects of risk-taking in favour of the instrumental aspects. A model that incorporates both affiliation and instrumentality increases our understanding of the nature and significance of risk-taking in women's lives.

A model of risk-taking that values both personal goal attainment and connection to others supports the work of Siegelman (1983) and Sweeney (1985). Both researchers reported

significant incidents of risk-taking related to the maintenance of interpersonal relationships and to the achievement of personal goals. Siegelman (1983) wrote of self-defined risks cited by 294 participants, 70% of whom were women. Approximately 42% described risks connected with work; 21% described interpersonal risks, and 21% described the risk of relocation involving both interpersonal and vocational factors. Sweeney (1985) documented the three most significant risks cited by 18 female entrepreneurs as risks of 'being myself,' risks concerning work, and risks involving the welfare of others. The results of both studies support the conceptualization of risk-taking in terms of affiliation and instrumentality.

The results of this study also support the observations of Kogan and Wallach (1964) and Brehmer (1987) who suggested that risk-taking may also be emotional and motivational in nature and based upon real life experience, rather than strictly cognitive and based upon rational decisionmaking in hypothetical situations. The risk-taking experiences of women reported in this research supports Brehmer's observation that psychological research into risk-taking has been limited by a one-dimensional, cognitive approach.

Carol Gilligan (1982) expanded an understanding of moral development that had previously emphasized a cognitive approach to reasoning that valued separation and individuation

(instrumentality) over attachment (affiliation). Her research demonstrated that both the dimensions of separation, or instrumentality, and attachment, or affiliation, are relevant to the moral reasoning of both women and men. The results found in this study of women's risk-taking lend support to the work of Gilligan and others (Bem, 1978; Choderow, 1974; Miller, 1976) who have identified the importance of affiliation in women's lives.

Participants in this study defined risk-taking in ways that further our understanding and support the conceptualization of risk-taking in terms of affiliation and instrumentality. Traditional definitions have emphasized elements of physical safety or unpredictability (Guralnik, 1979; Keinan, Meir, & Gome-Nemirovsky, 1984). Defined by the Webster New World Dictionary (1979), risk is "the chance of injury, damage, or loss" (p. 516). The emphasis in this definition relates to the consequences of an action or event. Results from the present study suggested that risk-taking is more complex. Participants emphasized elements of emotional, as well as intellectual and physical, involvement, potential loss, uncertainty regarding the outcome, and a personal process of change. Risk-taking was viewed as a process that involved concern for both the attainment of a goal and for the connection of self to the social and physical environment. The definitions incorporated elements of instrumentality and affiliation.

The themes identified in the present study support the work of Siegelman (1983). Siegelman wrote that personal risk is characterized by four elements: uncertainty about the outcome, the possibility of significant losses as well as gains, the permanence of consequences, and a high degree of personal significance. There are strong parallels between the themes identified by Siegelman (1983) and those identified in the present study.

In considering the themes described by the participants, traditional definitions of the term risk-taking, which have focussed on physical safety or unpredictability, appear to offer a limited understanding of the process involved in risk-taking. A more complete definition of the term risk-taking, arising from this research, might be as follows: Risk-taking is a personal and fundamental change process that engages levels of emotional, physical, and intellectual involvement, as the individual encounters potential loss or gain, and uncertainty regarding the outcome.

Analysis of the interview results supports the supposition that a relationship exists between social context and risk-taking. Women in traditional occupations focussed on the affiliative dimension of risk-taking to a greater extent than women in non-traditional occupations. The traditional group reported a balance of affiliative risks (48% of group response)

and instrumental risks (45%). Women in non-traditional occupations emphasized instrumental risk-taking (68%) over affiliative risk-taking (29%). Relocation risks, involving both dimensions, accounted for the remainder; 7% of the response for the traditional group and 3% for the non-traditional group. Differences between traditional and non-traditional occupation groups with respect to working environment appeared to be related to differences in emphasis upon affiliative and instrumental risk-taking.

The differences in work environment and demographic variables between the two occupational groups provide insight into the observed differences in the emphasis placed on risk-taking. Significant differences were found in employment status, personal income, and number of children. The non-traditional group was more actively engaged in full-time employment (86.4%) than the traditional group (18.4%). The traditional group was more actively engaged in homemaking and/or part-time employment (72.7%) than the non-traditional group (4.5%). Forty-one percent of the women in non-traditional employment earned at least \$30,000 annually, whereas 59% of the women in the traditional group earned less than \$10,000. Women in the traditional group reported having an average of 2.3 children, greater than the average of 0.50 children for the non-traditional group of women. The two groups did not differ significantly with respect to age,

living status, and level of education. By definition, women in the non-traditional group were engaged in occupations historically held by men, in which they represented less than one-third of the labour force.

Tentative conclusions, related to the interplay of social context and risk-taking, arise from the observed differences between the two groups. It would appear that work activity, personal circumstance, and social context may be related to the opportunity, motivation, and demand for risk-taking behaviour. While no evidence of a cause-effect relationship can be claimed, the results suggest that non-traditional work activity and more traditional activity, including homemaking and child-rearing, might be linked to differences in the emphasis placed on affiliative and instrumental risk-taking. It may be that employment in non-traditional occupations is linked to a demand or predisposition for instrumental risk-taking and that engagement in traditional activities is linked to a greater demand or predisposition for affiliative risk-taking. Income level, employment status and childrearing activity may be related to risk-taking as well. Further study would be required to provide a greater understanding of the relationship between social context, activity, and risk-taking.

The influence of external factors or social context upon human behaviour has been documented (Cox, 1981; Firestone, 1970;

Kaufman & Richardson, 1982; Tangri, 1975). Firestone (1970) linked the differences between feminine and masculine roles to differences in social and biological function. In particular, she asserted that reproduction and childrearing influenced and limited feminine role behaviour.

The significance of social context with respect to risk-taking behaviour has been articulated as well. Several researchers have described the need for further exploration of risk-taking within a framework of real-life experience and social context (Brehmer, 1987; Siegelman, 1983, Sweeney, 1985). Others have provided evidence of external, as well as personal, factors influencing women's risk-taking, including limited opportunity, negative social consequences, gender and outgroup effects in the workplace, and socialization (Gerike, 1983; Morscher & Schindler Jones, 1982; Waites, 1978). The observation of differences in the nature of risk-taking described by the women in this study supports the accumulated research linking social context and risk-taking behaviour.

Another observation of difference between the two occupational groups contributes to this discussion. This study found that a significantly higher number of women in the traditional group (11) were classified as feminine on the BSRI, compared to women in the non-traditional group (2). Further, results showed that there was a significantly greater number of

women classified as masculine in the non-traditional group (11) than in the traditional group (2). These results contradict, in part, the findings of Glasgow (1982) who reported a significantly greater number of women classified as androgynous in non-traditional occupations. The present study supports Glasgow's finding that women in traditional occupations were more likely to be classified as feminine on the BSRI.

The interview results provided support for a tentative link between occupational activity, sex role orientation and risk-taking behaviour. It appeared that women in traditional activity were more likely to identify with feminine characteristics and reported a greater number of affiliative risks, whereas women in non-traditional activity were more likely to identify with masculine characteristics and reported a greater number of instrumental risks. Further study is required to provide a better understanding of the relationships between sex-role orientation, risk-taking behaviour, and occupational activity. For example, an exploration of possible relationships between masculinity and instrumental risk-taking and between femininity and affiliative risk-taking might be of benefit. Potentially, the inclusion of men in a similar study might shed further light on the dimensions of risk-taking explored with the women in this study.

In postulating the existence of a 'different voice'

articulated by women in descriptions of moral decision-making, Gilligan (1982) cautioned that generalizations based upon gender-specific differences were inappropriate. It would be misleading to suggest that the dimension of instrumentality represents male behaviour or that the dimension of affiliation represents female behaviour. The voices of the women in this study articulated a complex range of experiences, both instrumental and affiliative. The significance of the present study comes from these results and supports the observation that the dimension of affiliation has been largely overlooked in the psychology of risk-taking. Evidence of the dimensions of affiliation and instrumentality operating within a contextual framework may contribute to a greater understanding of risk-taking behaviour in the lives of both women and men.

The relationship between sex-role orientation and risk-taking was also explored through analysis of the results from the BSRI, the CDQ and a self-estimate of risk scale. It was hypothesized that a positive relationship would exist between risk-taking behaviour, as measured by the inventories, and androgynous sex-role orientation. The results indicated that participants classified by sex-role orientation (feminine, masculine, androgynous, or undifferentiated) did not differ significantly on results from either the CDQ or the self-estimated risk scale. These results contradict the findings of

Glasgow (1982) who reported that women classified as androgynous on the BSRI scored significantly higher than other women on self-estimated risk-taking. The findings support the work of Shiendling (1985) who reported no significant difference between sex-role orientation and results from the CDQ. The lack of support for a relationship between sex-role orientation and measures of risk-taking suggests that similarities exist in women's estimates of risk-taking, irrespective of sex-role orientation.

The relationship between career orientation and risk-taking as measured by the CDQ and a self-estimate of risk was also examined. It was hypothesized that a positive relationship would be supported between non-traditional occupational activity and higher scores of risk-taking on the CDQ and the self-estimate of risk scale. Again, the results did not support this hypothesis as no significant differences were found between occupational groups and estimates of risk-taking.

The results contradicted two studies which reported that women in non-traditional occupations scored higher on the CDQ or on self-reported estimates of risk-taking than women in traditional activity (Glasgow, 1982; Steiner, 1986). The present findings suggested that women in traditional and non-traditional occupations respond to estimates of risk-taking in a manner more similar than might have been expected. This observation supports the findings of Brown (1978), who compared risk-taking between

married and divorced women, and Shindling (1985), who compared risk-taking between women engaged in prostitution and women engaged in occupations perceived as less risky. Both researchers found no support for significant differences between groups on risk-taking measures, including the CDQ and self-report estimates. Glasgow (1982) also noted that women in traditional and non-traditional occupations appeared more similar than different.

The women in this study recorded no significant differences in responding to a self-estimate of risk scale and the CDQ. Results from the 12-item CDQ averaged 57 out of a maximum 108 points. This average indicated a willingness to risk in each hypothetical situation only if the chance for a successful outcome was between 5 and 6 out of 10, which is a reasonably conservative estimate of risk-taking. Results from the 7 point self-estimate of risk scale averaged 5.2, which indicates that participants rated themselves as often willing to take a risk in their own lives. While comparisons between the two scales cannot be statistically substantiated, it is interesting to speculate whether the women were more willing to risk in real-life situations than in hypothetical situations. Further study into this question may prove beneficial.

A second observation arises from this speculation. The CDQ asked respondents to respond on the basis of advice they would

give to the person named in each situation, rather than on how they would behave in the situation. It would be of interest to explore differences in willingness to advise others and willingness to personally engage in risk-taking. One might speculate that the CDQ does not measure personal risk-taking, but rather measures a willingness to give advice to others.

The interview and statistical results suggest that the CDQ does not fully capture the experiences of risk-taking described by the women in the study. The original inventory consisted of 12 situations, each with a male central character faced with a decision involving risk-taking. For the purpose of this study, one-half of the items were altered to include a central female character. Of the 12 items, 11 consisted of risk-taking situations that can be classified as instrumental in nature, involving career, sports, education, and financial risk-taking. Only one situation, involving a marriage decision, can be classified as affiliative in nature. In light of the interview results which highlighted the importance of affiliative risk-taking in women's lives, there is support for the observation that the CDQ does not accurately reflect situations relevant to women's experience of risk-taking. This observation supports the work of Brown (1978) and Sweeney (1985) who criticized the CDQ for a lack of content relevant to women.

Gilligan (1986) described the need for research on the

psychology of women to begin with established research tools and paradigms and to then expand the research to include an exploration of women's experience in real life rather than in artificial or hypothetical situations. The present study used the administration of the CDQ as a bridge, connecting it to the previous research on risk-taking. The results arising from its use suggested that the participants did not differ significantly in their estimations of hypothetical risk-taking. The research was expanded by an analysis of self-reported incidents of risk-taking. The results generated from the interviews furthered an understanding of women's risk-taking beyond the results demonstrated from analysis of the CDQ results. The significance of personal experience, social context, and real-life experience that arose from the personal descriptions and definitions of risk-taking provided by participants broadened an understanding of risk-taking relevant to women. The richness and complexity of participants' personal descriptions of risk-taking supports the observations of researchers who called for further study into the real-life experience of risk-taking (Brehmer, 1987; Siegelman, 1983; Sweeney, 1985; Waites, 1978).

The critique of the CDQ as a measure of risk-taking was supported by comments from the participants who were asked to give their reaction to the inventory. The majority (73%) of participants were critical of the CDQ. It is criticized for

biased and inappropriate situations, a lack of social context, the assumption that advice given to another person reflects personal risk-taking, and for the assumption that absolute solutions exist for complex human dilemmas.

These critical comments demonstrated participants' concern for the individuals mentioned in the dilemmas, for personal and social factors influencing the situations, and for the imposition of advice-giving upon others. These observations supported the research findings that participants approached risk-taking from a perspective that valued affiliation as well as instrumentality, that social context is linked to risk-taking activity, and that the CDQ does not provide a complete portrayal of risk-taking relevant to participants' life experiences.

Feminist scholars (Gilligan, 1982; Lerman, 1987; Oakley, 1981) have documented the need for research into the psychology of women to actively engage women in the process of research and interviewing. Inclusion of participants is called for in order to counter the treatment of research participants as passive objects and to further the validation of participants' subjective experience. It was hypothesized that the conduct of the present study, which encouraged comments about the research, would contribute to an increased understanding of risk-taking by participants. Support was found for this hypothesis. By self-reported comments, the majority (73%) of participants indicated

that their involvement in the study had increased their understanding of risk-taking and perception of self. They cited increased self-awareness, confidence, and knowledge about the risks they encountered in daily life. This research has provided both theoretical insights relevant to the nature of women's risk-taking and personal insights for participants to the extent that they reported an increase in their self-esteem and knowledge.

Lerman (1987) proposed a preliminary set of criteria by which models of personality and behaviour describing female experience might be evaluated. The criteria articulated the following requirements: clinical usefulness, recognition of the diversity of women, a positive view of women, relevance to women's experience, recognition of the connection between internal (personal) and external (social) factors, inclusive language, and support for non-sexist interpretations and therapy. This investigation has attempted to satisfy these criteria by respecting and exploring women's lived experience within a social context and by utilising methods and language that support non-sexist values. Research is not values free (Eichler, 1980). The design and conduct of this research has been influenced by my understanding of feminist principles. The limitations and implications of this study are discussed with Lerman's criteria in mind.

### Limitations

Evident in this study are methodological limitations concerning the sample, the type of design chosen, data analyses, and the theoretical constructs presented. The sample size (44) was large and varied enough to demonstrate a broad range of risk-taking, but had limited statistical power, restricting generalizations to the general population. The women were diverse in age, education, employment status, income level, and living status, but were predominantly white and anglophone. Women from different ethnic and cultural backgrounds were underrepresented. No attempt was made to recruit women with disabilities or native, francophone, and immigrant women. The sample was chosen from groups identified through personal contacts of the researcher, rather than randomly selected. All participants were volunteers. The sample, therefore, was not representative of the general female population.

It is acknowledged that, while this study is meant to be accessible to non-academics, some terminology is exclusive and particular to those versed in psychology and statistical analysis.

The design of this study was broad and incorporated both survey and causal-comparative methods. The research was descriptive rather than analytical in nature. In-depth analysis of the process, motivation, and cause-and-effect of women's risk-

taking was beyond the scope and intent of this study. The statistical and content analysis techniques used in this study permitted descriptions of risk-taking and relationships between subgroups only. No causal inferences may be drawn from the observed results.

Quantitative research derives its potency from the demonstration of statistically significant differences. As evidenced in the work of Maccoby and Jacklin (1974) there is a tendency within psychology to stress sex and gender differences rather than similarities. Statistical evidence of 'no sex difference' is often dismissed as insignificant (Eichler, 1980). Emphasis on differences and dismissal of similarities can distort the interpretation of research results. This study has attempted to recognize the existence of similarities as well as differences in the risk-taking experience of participants. Similarities were identified through discussion of hypotheses that were not supported in the analysis of results.

The data analysis was further limited by two factors. Five years elapsed between the start and completion of the study and only one person was used to code information and generate categories in the analysis of the interview data. The use of two coders and an abbreviated time frame would strengthen the research design.

The theoretical constructs supporting this research arise

from a feminist approach to psychology. Modern feminism embodies a variety of approaches and has developed from a broad spectrum of personal experiences and scholarship. Feminist psychology presents a challenge for scholars to be informed by a multidisciplinary perspective while remaining close to the richness of women's lived experience. This challenge requires psychological researchers to be familiar with many areas of study. This may present problems in the analysis of theory generated from disciplines unfamiliar to the researcher. In this research, for example, a concern was identified regarding the use of affiliative and instrumental dimensions that originated in the work of Parsons (1955), a sociologist. This earlier work is limited in feminist applicability for its assumption of sex or gender based behaviour and its failure to critique the social structures that maintain affiliative and instrumental roles. Research can be severely limited without a historical and multidisciplinary context within which concepts can be evaluated. It is a responsibility of researchers to identify conflicting perspectives, to evaluate earlier findings, and to develop new theoretical constructs.

While the preceding considerations in methodology limit the extent to which the results may be interpreted and generalized, the research design corresponded with the intent and focus of the study. In retrospect, were this study to be replicated, a

phenomenological approach might be employed. The exploration of a critical incident of risk-taking with fewer participants and a less structured interview format might generate similar themes.

### Implications

This research explored the question of how women define and experience risk-taking in their lives. Throughout the discussion of results, the significance of risk-taking within a dimension of affiliation, or connection to others, as well as a dimension of instrumentality, or attainment of personal goals, was identified. The women who participated in this study also identified the significance of social context and personal circumstance as factors related to their risk-taking behaviour.

The views offered by participants are consistent with the work of feminist developmental theorists such as Gilligan (1982), Miller (1976), and Choderow (1974) who provided evidence that women develop in relation to others and experience their lives within a relational and contextual framework. The research findings also support the observations of theorists in the area of psychological risk such as Brehmer (1987), Siegelman (1983), and Sweeney (1985) who articulated the bias in risk-taking theory that has emphasized a one-dimensional, cognitive focus removed from real-life experience.

The present study has contributed to an increased understanding of the importance of affiliation and instrumentality

in women's risk-taking and has provided support for a two-dimensional model of risk-taking that incorporates personal and social circumstances. These findings suggest implications for research and practical applications for counselling and education.

Research implications relate to further study into the psychology of risk-taking and of women's development. Research addressing the risk-taking of groups underrepresented or not included in this study, such as native, francophone, immigrant, and handicapped women, would be appropriate. Exploration of the personal experiences of men would potentially extend the conceptualization of affiliative and instrumental risk-taking. Further examination of the differences between women in traditional and non-traditional occupations, and between women with differing sex-role orientations, with respect to the demand or predisposition for risk-taking would expand upon the findings of this study. It has been noted that further study would be required to analyze the process and motivational aspects of risk-taking.

My personal observations suggest that an exploration of possible changes in risk-taking behaviour over the life span may provide additional insights into risk-taking. I also anticipate that a relationship might exist between one's life values and risk-taking.

It has also been noted that a need exists for further research on women's development that respects and explores life experience, challenges established theories and methodology, encourages the active involvement of women in the research, and analyzes social as well as personal realities that may affect behaviour. In addition, assessment tools, such as the CDQ, require examination concerning their appropriateness for use with women. Finally, research that explores other aspects of behaviour utilising the constructs of affiliation and instrumentality may enhance our understanding of the importance of relationships and the achievement of personal goals in the lives of both women and men.

Practical applications of the findings discussed in this research relate to implications for counselling and education. Feminist counselling encourages positive evaluation and development of women, social analysis, and the active participation of women in the counselling process, to facilitate personal change (Russell, 1984). This study encouraged participants to describe their own experience and to be actively engaged in the interview process. As a result, the majority of participants reported an increase in knowledge and self-esteem with respect to risk-taking. The results also supported the existence of a relationship between social context and personal experience of risk-taking. These findings support the value of a

feminist approach to research and counselling with women.

The results also highlighted specific implications for counselling practice. The significance of affiliation, as well as instrumentality, deserves recognition in therapeutic settings, including career counselling. Participants reported that seeking counselling assistance involved risk-taking. The loss experienced by many participants in the process of risk-taking may be a significant counselling issue. The results inform counselling practice about the risks involved in returning to employment or education after an absence. The risks encountered by women on the job, particularly by women in non-traditional occupations, may emerge as counselling concerns.

The results may further inform counselling and education programs that are concerned with issues such as depression, self-esteem, assertiveness, alcohol and drug treatment, relationships, and career or life planning. Career development programming may be enhanced by the inclusion of the options and risks to be considered by girls and women seeking to enter non-traditional occupations, and by women seeking a return to the labour force after an absence. Finally, the further development of feminist and non-sexist methods of counselling and education may challenge stereotypical assumptions and myths about human development as challenged by the women in the present study.

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## Appendix A

Occupations of ParticipantsTraditional

## Clerical:

- Bookkeeper
- Clerk/Typist
- Word Processor
- Office Manager

## Teaching And Social Services:

- Teacher
- Librarian
- Social Services Administrator
- Employment Counsellor

## Marketing And Sales:

- Sales Representative
- Marketing Consultant

## Fine Arts:

- Potter
- Writer

## Full-Time Homemaker

Non-Traditional

## Construction Industry:

- Estimator
- General Manager
- Project Manager
- Owner
- Commercial Representative

## Engineering And Technical Services:

- Chemist
- Biochemist
- Science Faculty Member
- Meteorologist
- Process Engineer
- Agriculture

## Self Employment:

- Farmer
- Freelance Photographer
- Bartender
- Tailor

## Appendix B

Letter of Introduction

To:

Dear:

My name is Jane Templeman. I am a graduate student in the Department of Counselling Psychology at U.B.C.

I am conducting a research project that is concerned specifically with determining how women approach and experience risk-taking situations in their lives. The results of the study may help to broaden the understanding of women's development and to design better counselling and career planning services for women.

I am interested in recruiting volunteers from your membership. Completion of the study would take approximately 60 minutes and involves responding to a risk-taking inventory, a personal profile, and a brief interview. Participants are free to choose to not answer specific questions or to withdraw at any time without penalty. The purpose of the study and an outline of the interview questions would be presented to potential volunteers at possibly a members' meeting, or as seen to be most appropriate. Confidentiality will be insured and participants will receive a summary of the results if they desire.

Your co-operation in consenting to the conduct of this study would be appreciated. A reply at your earliest convenience would permit me to carry out the next phase of the project.

I would be most willing to answer any questions you might have about the research. Please feel free to contact me at:

My address is as follows:

Thank-you for your consideration.

Sincerely,

Jane Templeman

## Appendix C

Group Presentation Protocol

Hello. My name is Jane Templeman. I am completing my degree in Counselling Psychology at the University of British Columbia. Part of that work involves the conduct of this research thesis entitled, "Women and Risk-taking." I am here today to ask for your assistance in that project. In approaching the research, my interest is twofold; first in the topic, women and the risks they encounter in their lives; and secondly, I am interested in the participants themselves and your personal understanding and experience of risk-taking. Let me briefly explain the purpose of this study. I hope to learn and write about how we, as women, define and experience risks in our lives. What risks have we taken? Not taken? What might each of us view to be a risk? And what might be the similarities and differences amongst us in the risks that we encounter and take? No one has yet to ask those questions of women and I believe it is important to do so, to help broaden our understanding of women's lives and development. The results of the study will be used to further than understanding and to help design better counselling services for women.

Quite simply, your choosing to participate would involve about 60 minutes of your time spent in an interview that could be arranged to suit a time and place most convenient for you. The interview itself consists of two parts:

1. 5 open questions exploring the risks you may have encountered in your life, and
2. 2 brief questionnaires.

Your participation would be; - completely voluntary  
- completely confidential and anonymous

I would audiotape the interview to minimize notetaking. Those tapes would be heard by myself only to record the information. They would then be destroyed. All data is grouped together. No one person is identified. You would be free to choose to not respond to any item and to withdraw from the study at any time should you desire, without penalty.

I plan to interview 44 women, hoping to draw from a cross-section of women working in both traditional, and non-traditional occupations, women in training for future work, women working full time to maintain home and/or families, and women who are currently unemployed.

I believe that the interview can be both informative and fun. I am convinced that your contribution will be of benefit to many women. Thank-you for your attention.

I would like to give each of you a handout that details the interview questions so you have an idea of what we would discuss. Also, a sign up sheet that you may sign with your name and phone number if you are willing to participate. It would permit me to call within the next 10 days to confirm your interest and to schedule an interview time and place that is good for you. If you would like to decide later, please take the handout; my name and phone no. are listed, feel free to call me in the coming week.

Thank-you .... are there any questions?

## Appendix E

Interview Protocol

To be read to each participant prior to the interview questions.

Thank-you for agreeing to participate in this study. To begin, I would like to take a moment to outline the purpose of the study and to explain what will happen during the interview.

The interview is in two parts. The first consists of a series of questions which deal with your own beliefs and experiences in risktaking; more specifically, about examples in your life where you have chosen to take, and not to take, a risk. These interview-type questions will be audio-taped to cut down on the necessity of notetaking. The second half consists of 2 brief questionnaires that ask you to describe yourself and to make choices in hypothetical, or made-up, situations.

Your responses will be combined in a statistical report that compiles information about all the women interviewed. In no way will you be identified or singled out. Tapes will be destroyed upon analysis.

There are no right or wrong answers. Please feel free to give whatever responses you are comfortable with and believe are most appropriate. You are free to not respond to any item or to withdraw from the study at any time without penalty. Please feel free to do so without embarrassment. It is assumed that your attendance here implies your consent to participate.

Results will form the basis of my thesis report and may possibly be published. I therefore ask that you give honest and serious consideration to the items.

Have you any questions before we begin?

I initially will ask you to answer a few questions that will provide some essential background information....

Interview Sequence:

1. Demographic Profile
2. Interview Items
3. Bem Sex-Role Inventory
4. Choice Dilemmas Questionnaire
5. Concluding Questions and Comments, sign form if interested in receiving a summary of results
6. Thank-you

## Appendix F

Consent Form

I understand the purposes and nature of this study, and have been informed that my participation is voluntary and that I am free to choose to not respond to any item, and may withdraw from the study at any time without penalty. Further, that all information will be strictly confidential and that I will not be identified with the information in any way.

I hereby sign my consent to participate in the study.

\_\_\_\_\_  
signature

\_\_\_\_\_  
date

I would like to receive a summary of results upon completion of the study.

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Appendix G  
Demographic Profile

ID# \_\_\_\_\_

1. AGE: \_\_\_\_\_

2. LIVING STATUS:

A) LIVING WITH PARTNER: \_\_\_\_\_

B) LIVING ALONE: \_\_\_\_\_

C) LIVING WITH FRIENDS: \_\_\_\_\_

D) LIVING WITH FAMILY: PARENTS: \_\_\_\_\_ CHILDREN: \_\_\_\_\_

3. NUMBER OF CHILDREN: \_\_\_\_\_

4. EMPLOYMENT STATUS:

A) CURRENTLY EMPLOYED: \_\_\_\_\_ OCCUPATION: \_\_\_\_\_  
FULL TIME: \_\_\_\_\_ PART-TIME: \_\_\_\_\_

B) CURRENTLY UNEMPLOYED: \_\_\_\_\_ OCCUPATION: \_\_\_\_\_

C) STUDENT: \_\_\_\_\_ FIELD OF STUDY: \_\_\_\_\_

D) FULL TIME HOME AND/OR FAMILY MAINTENANCE \_\_\_\_\_

5. ANNUAL INCOME:

\_\_\_\_ UNDER \$10,000  
\_\_\_\_ \$10,000 - \$20,000  
\_\_\_\_ \$20,000 - \$30,000  
\_\_\_\_ OVER \$30,000

6. EDUCATION:

COMPLETED: a) \_\_\_\_\_ HIGH SCHOOL  
b) \_\_\_\_\_ VOCATIONAL SCHOOL OR COLLEGE  
c) \_\_\_\_\_ UNDERGRADUATE  
d) \_\_\_\_\_ GRADUATE

## Appendix H

Interview Questions

The following standardized items will be presented to each participant.

1. If you were to think of 'risk-taking' in your own life and experience, what would be your personal understanding or definition of the term 'risk-taking'?
  
2. I'd like now to focus on that personal understanding.  
  
Can you think of recent specific incidents that have been meaningful risk-taking situations for you? Briefly list up to 5 examples.
  - 1.
  - 2.
  - 3.
  - 4.
  - 5.
  
3. What, specifically, was the risk for you in each of those situations?
  - 1.
  - 2.
  - 3.
  - 4.
  - 5.
  
4. Can you now think of recent specific incidents where you decided NOT to take a risk? Briefly list up to 5 examples.
  - 1.
  - 2.
  - 3.
  - 4.
  - 5.
  
5. Again, what specifically was the risk for you in each of those situations?
  - 1.
  - 2.
  - 3.
  - 4.
  - 5.

6. If you were to rate yourself on your willingness to take risks, using your own definition of the term, where would you place yourself on a 7-point scale?

Never take a risk 3 4 5 6 7 Always take a risk

7. BSRI

8. CDQ

8. The inventory you have just completed measured a tendency to take risks in situations where the outcome is unknown. Many of the situations described financial, occupational, survival, and sporting risks. What was your reaction to that inventory?

9. In closing, has what we've talked about here effected your understanding of risk-taking in any way?

NO \_\_\_\_\_

YES \_\_\_\_\_ In what ways?

10. Have you anything to comment on about this session or the research?

Suggestions as to how this research might be useful?

11. Would you like to hear about the results?

YES \_\_\_\_\_

NO \_\_\_\_\_

CONTACT: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Comments on Session:

Date: \_\_\_\_\_

Length: \_\_\_\_\_

## Appendix I

BSRISANDRA LIPSITZ BEM

In this inventory, you will be presented with sixty personality characteristics. You are to use those characteristics in order to describe yourself. That is, you are to indicate, on a scale from 1 to 7, how true of you these various characteristics are. Please do not leave any characteristic unmarked.

Example: \_\_\_\_\_ Sly

- Mark a 1 if it is never or almost never true that you are sly.  
 Mark a 2 if it is usually not true that you are sly.  
 Mark a 3 if it is sometimes but infrequently true that you are sly.  
 Mark a 4 if it is occasionally true that you are sly.  
 Mark a 5 if it is often true that you are sly.  
 Mark a 6 if it is usually true that you are sly.  
 Mark a 7 if it is always or almost always true that you are sly.

Thus, if you feel it is sometimes but infrequently true that you are "sly", never or almost never true that you are "malicious", always or almost always true that you are "irresponsible," and often true that you are "carefree", you would rate these characteristics as follows:

3 Sly
7 Irresponsible  
1 Malicious
5 Carefree

Describe yourself according to the following scale:

1	2	3	4	5	6	7
Never or al- most never true	Usually not true	Sometimes but infrequently true	Occasion- ally true	Often true	Usually true	Always or almost al- ways true
_____ 1. Self-reliant						_____ 31. Makes decisions easily
_____ 2. Yielding						_____ 32. Compassionate
_____ 3. Helpful						_____ 33. Sincere
_____ 4. Defends own beliefs						_____ 34. Self-sufficient
_____ 5. Cheerful						_____ 35. Eager to soothe hurt feelings
_____ 6. Moody						_____ 36. Conceited
_____ 7. Independent						_____ 37. Dominant
_____ 8. Shy						_____ 38. Soft-spoken
_____ 9. Conscientious						_____ 39. Likable
_____ 10. Athletic						_____ 40. Masculine
_____ 11. Affectionate						_____ 41. Warm
_____ 12. Theatrical						_____ 42. Solemn
_____ 13. Assertive						_____ 43. Willing to take a stand
_____ 14. Flatterable						_____ 44. Tender
_____ 15. Happy						_____ 45. Friendly
_____ 16. Has strong personality						_____ 46. Aggressive
_____ 17. Loyal						_____ 47. Gullible
_____ 18. Unpredictable						_____ 48. Inefficient
_____ 19. Forceful						_____ 49. Acts as a leader
_____ 20. Feminine						_____ 50. Childlike
_____ 21. Reliable						_____ 51. Adaptable
_____ 22. Analytical						_____ 52. Individualistic
_____ 23. Sympathetic						_____ 53. Does not use harsh language
_____ 24. Jealous						_____ 54. Unsystematic
_____ 25. Has leadership abilities						_____ 55. Competitive
_____ 26. Sensitive to the needs of others						_____ 56. Loves children
_____ 27. Truthful						_____ 57. Tactful
_____ 28. Willing to take risks						_____ 58. Ambitious
_____ 29. Understanding						_____ 59. Gentle
_____ 30. Secretive						_____ 60. Conventional

## Appendix J

Choice Dilemmas Questionnaire

Instructions. On the following pages, you will find a series of situations that are likely to occur in daily life. The central person in each situation is faced with a choice between two alternative courses of action, which we might call X and Y. Alternative X is more desirable and attractive than alternative Y, but the probability of attaining or achieving X is less than Y.

For each situation on the following pages, you will be asked to indicate the minimum odds of success you would demand before recommending that the more attractive alternative, X, be chosen.

Read each situation carefully before giving your judgement. Try to place yourself in the position of the central person in each of the situations. There are 12 situations in all. Please do not omit any of them.

1. Ms. A, an electrical engineer, who is married and has one child, has been working for a large electronics firm since graduating from college five years ago. She is assured of a lifetime job with a modest, although adequate, income, and liberal pension benefits upon retirement. On the other hand, it is very unlikely that her salary will increase much before she retires. While attending a convention, Ms. A is offered a job with a small, newly formed company which has a highly uncertain future. The new job would pay more to start and offers the possibility of a share in the ownership if the company survived the competition of the larger firms.

Imagine that you are advising Ms. A. Listed below are several probabilities or odds of the new company proving financially sound. Please check the LOWEST probability that you would consider acceptable to make it worthwhile for Ms. A to take the new job.

- The chances are 1 in 10 that the company will prove financially sound.
- The chances are 3 in 10 that the company will prove financially sound.
- The chances are 5 in 10 that the company will prove financially sound.
- The chances are 7 in 10 that the company will prove financially sound.
- The chances are 9 in 10 that the company will prove financially sound.
- Ms. A should not take the new job no matter what the chances.

2. Mr. B, a 45-year-old accountant, has recently been informed by his physician that he has developed a serious heart ailment. The disease would be sufficiently serious to force Mr. B to change many of his strongest life habits: reducing his work load, drastically changing his diet, giving up favourite leisure pursuits. The physician suggests that a delicate medical operation could be attempted which, if successful, would completely relieve the heart condition. But its success could not be assured, and in fact, the operation might prove fatal.

Imagine that you are advising Mr. B. Listed below are several probabilities or odds that the operation will prove successful. Please check the LOWEST probability that you would consider acceptable for the operation to be performed.

- Mr. B should not have the operation no matter what the chances.
- The chances are 9 in 10 that the operation will be a success.
- The chances are 7 in 10 that the operation will be a success.
- The chances are 5 in 10 that the operation will be a success.
- The chances are 3 in 10 that the operation will be a success.
- The chances are 1 in 10 that the operation will be a success.

3. Mr. C, a married man with two children, has a steady job that pays him about \$26,000 per year. He can easily afford the necessities of life, but few of the luxuries. Mr. C's father, who died recently, carried a \$24,000 life insurance policy. Mr. C would like to invest this money in stocks. He is well aware of the secure 'blue chip' stocks and bonds that would pay approximately 9% on his investment. On the other hand, Mr. C has heard that the stocks of a relatively unknown company X might double their present value if a new product currently in production is favourably received by the public. However, if the product is not favourably received, the stocks would decline in value.

Imagine that you are advising Mr. C. Listed below are several probabilities or odds that company X stocks will double their value. Please check the LOWEST probability that you would consider acceptable for Mr. C to invest in company X stocks.

- The chances are 1 in 10 that the stocks will double their value.  
 The chances are 3 in 10 that the stocks will double their value.  
 The chances are 5 in 10 that the stocks will double their value.  
 The chances are 7 in 10 that the stocks will double their value.  
 The chances are 9 in 10 that the stocks will double their value.  
 Mr. C should not invest in company X stocks no matter what the chances.

4. Mr. D is captain of college X's football team. College X is playing its rival, college Y, in the final game of the season. The game is in its final seconds, and Mr. D's team (X) is behind. College X has time to run one more play. Mr. D, the captain, must decide whether it would be best to settle for a tie score with a play which would be almost certain to work or, on the other hand, should he try a more complicated and risky play which could bring victory if successful, but defeat if not.

Imagine that you are advising Mr. D. Listed below are several probabilities or odds that the risky play will work. Please check the LOWEST probability that you would consider acceptable for the risky play to be attempted.

- Mr. D should not attempt the risky play no matter what the chances.  
 The chances are 9 in 10 that the risky play will work.  
 The chances are 7 in 10 that the risky play will work.  
 The chances are 5 in 10 that the risky play will work.  
 The chances are 3 in 10 that the risky play will work.  
 The chances are 1 in 10 that the risky play will work.

5. Ms. E is president of a light metals firm in Canada. The firm is quite prosperous, and has strongly considered the possibilities of business expansion by building an additional plant in a new location. The choice is between building another plant in Canada, where there would be moderate return on the initial investment, or building a plant in a foreign country. Lower labour costs and easy access to raw materials in that country would mean a much higher return on the initial investment. On the other hand, there is a history of political instability and revolution in the foreign country under consideration. In fact the leader of a small minority party is committed to nationalizing, that is taking over, all foreign investments.

Imagine that you are advising Ms. E. Listed are several probabilities or odds of continued political stability in the foreign country under consideration. Please check the LOWEST probability that you would consider acceptable for Ms. E's firm to build a plant in that country.

- The chances are 1 in 10 that the country will remain politically stable.
- The chances are 3 in 10 that the country will remain politically stable.
- The chances are 5 in 10 that the country will remain politically stable.
- The chances are 7 in 10 that the country will remain politically stable.
- The chances are 9 in 10 that the country will remain politically stable.
- Ms. E's firm should not build a plant in the foreign country no matter what the chances.

6. Mr. F is currently a college senior who is very eager to pursue graduate study in chemistry leading to a Doctor of Philosophy degree. He has been accepted by both University X and Y. University X has a world-wide reputation for excellence in chemistry. While a degree from University X would signify outstanding training in this field, the standards are so rigorous that only a fraction of the degree candidates actually receive the degree. University Y, on the other hand, has much less of a reputation in chemistry, but almost everyone admitted is awarded the degree, although the degree has much less prestige than the corresponding degree from University X.

Imagine that you are advising Mr. F. Listed below are several probabilities or odds that Mr. F would be awarded a degree at University X, the one with the greater prestige. Please check the **LOWEST** probability that you would consider acceptable to make it worthwhile for Mr. F to enroll in University X rather than University Y.

- Mr. F should not enroll in University X no matter what the chances.
- The chances are 9 in 10 that Mr. F would receive a degree from X.
- The chances are 7 in 10 that Mr. F would receive a degree from X.
- The chances are 5 in 10 that Mr. F would receive a degree from X.
- The chances are 3 in 10 that Mr. F would receive a degree from X.
- The chances are 1 in 10 that Mr. F would receive a degree from X.

7. Ms. G, a competent chess player, is participating in a national chess tournament. In an early match she draws the top favoured player in the tournament as her opponent. Ms. G has been given a relatively low ranking in view of her performance in previous tournaments. During the course of her play with the top ranked player, Ms G notes the possibility of a deceptive though risky manoeuvre which might bring her a quick victory. At the same time, if the attempted manoeuvre should fail, Ms. G would be left in an exposed position and defeat would almost certainly follow.

Imagine that you are advising Ms. G. Listed below are several probabilities or odds that Ms. G's deceptive play would succeed. Please check the **LOWEST** probability that you would consider acceptable for the risky play in question to be attempted.

- The chances are 1 in 10 that the play would succeed.
- The chances are 3 in 10 that the risky play would succeed.
- The chances are 5 in 10 that the risky play would succeed.
- The chances are 7 in 10 that the risky play would succeed.
- The chances are 9 in 10 that the risky play would succeed.
- Ms. G should not attempt the risky play no matter what the chances.

8. Ms. H, a college senior, has studied the piano since early childhood. She has won amateur prizes and given small recitals, suggesting that Ms. H has considerable musical talent. As graduation approaches, Ms. H has the choice of going to medical school to become a physician, a profession which would bring certain prestige and financial awards; or entering a conservatory of music for advanced training with a well-known pianist. Ms. H realizes that even upon completion of her piano studies, which would take many more years and a lot of study, success as a concert pianist would not be assured.

Imagine that you are advising Ms. H. Below are several probabilities or odds that Ms. H would succeed as a concert pianist. Please check the LOWEST probability that you would consider acceptable for Ms. H to continue with her musical training.

Ms. H should not pursue her musical training no matter what the chances.

The chances are 9 in 10 that Ms. H would succeed as a pianist.

The chances are 7 in 10 that Ms. H would succeed as a pianist.

The chances are 5 in 10 that Ms. H would succeed as a pianist.

The chances are 3 in 10 that Ms. H would succeed as a pianist.

The chances are 1 in 10 that Ms. H would succeed as a pianist.

9. Ms J is captured by the enemy in World War II and placed in a prisoner-of-war camp. Conditions in the camps are quite bad with long hours of hard physical labour and a barely sufficient diet. After spending several months in this camp, Ms. J noted the possibility of escape by concealing herself in a supply truck that shuttles in and out of the camp. Of course there is no guarantee that the escape would prove successful. Recapture by the enemy could well mean execution.

Imagine that you are advising Ms. J. Listed below are several probabilities or odds of a successful escape from the prisoner-of-war camp. Please check the LOWEST probability that you would consider acceptable for an escape to be attempted.

The chances are 1 in 10 that the escape would succeed.

The chances are 3 in 10 that the escape would succeed.

The chances are 5 in 10 that the escape would succeed.

The chances are 7 in 10 that the escape would succeed.

The chances are 9 in 10 that the escape would succeed.

Ms. J should not try to escape no matter what the chances.

10. Mr. K is a successful businessman who has participated in a number of civic activities of considerable value to the community. Mr. K has been approached by the leaders of his political party as a possible federal candidate in the next election. Mr. K's party is a minority party in the district, although the party has won occasional elections in the past. Mr. K would like to hold political office, but to do so would involve a serious financial sacrifice, since the party has insufficient campaign funds. He would also have to endure the attacks of his political opponents in a hot campaign.

Imagine that you are advising Mr. K. Listed below are several probabilities or odds of Mr. K's winning the election in his district. Please check the LOWEST probability that you would consider acceptable to make it worthwhile for Mr. K to run for political office.

- \_\_\_\_\_ Mr. K should not run for political office no matter what the chances.
- \_\_\_\_\_ The chances are 9 in 10 that Mr. K would win the election.
- \_\_\_\_\_ The chances are 7 in 10 that Mr. K would win the election.
- \_\_\_\_\_ The chances are 5 in 10 that Mr. K would win the election.
- \_\_\_\_\_ The chances are 3 in 10 that Mr. K would win the election.
- \_\_\_\_\_ The chances are 1 in 10 that Mr. K would win the election

11. Mr. L, a married 30 year old research physicist, has been given a 5 year appointment by a major university laboratory. As he contemplates the next 5 years, he realizes that he might work on a difficult, long-term problem which, if a solution could be found would resolve basic scientific issues in the field and bring high scientific honours. If no solution were found, however, Mr. L would have little to show for his 5 years in the laboratory, and this would make it difficult for him to get a job afterwards. On the other hand, he could, as most of his professional associates are doing, work on a series of short-term problems where solutions would be easier to find, but where the problems are of lesser scientific significance.

Imagine that you are advising Mr. L. Listed below are several probabilities or odds that a solution would be found to the difficult, long-term problem that Mr. L has in mind. Please check the LOWEST probability that you would consider acceptable to make it worthwhile for Mr. L to work on the more difficult, long-term problem.

- \_\_\_\_\_ The chances are 1 in 10 that Mr. L would solve the long-term problem.
- \_\_\_\_\_ The chances are 3 in 10 that Mr. L would solve the long-term problem.
- \_\_\_\_\_ The chances are 5 in 10 that Mr. L would solve the long-term problem.
- \_\_\_\_\_ The chances are 7 in 10 that Mr. L would solve the long-term problem.
- \_\_\_\_\_ The chances are 9 in 10 that Mr. L would solve the long-term problem.
- \_\_\_\_\_ Mr. L should not choose the difficult, long-ter problem  
no matter what the chances.

12. Ms. M is contemplating marriage to Mr. T, a man whom she has known for little more than a year. Recently, however, a number of arguments have occurred between them, suggesting some sharp differences of opinion in the way each view certain matters. Indeed, they decide to seek professional advice from a marriage counsellor as to whether it would be wise for them to marry. On the basis of these meetings with the marriage counsellor, they realize that a happy marriage, while possible, would not be assured.

Imagine that you are advising Ms. M and Mr. T. Listed below are several probabilities or odds that their marriage would prove to be a happy and successful one. Please check the LOWEST probability that you would consider acceptable for Ms. M and Mr. T to get married.

- \_\_\_\_\_ Ms. M and Mr. T should not marry no matter what the chances.
- \_\_\_\_\_ The chances are 9 in 10 that the marriage would be successful.
- \_\_\_\_\_ The chances are 7 in 10 that the marriage would be successful.
- \_\_\_\_\_ The chances are 5 in 10 that the marriage would be successful.
- \_\_\_\_\_ The chances are 3 in 10 that the marriage would be successful.
- \_\_\_\_\_ The chances are 1 in 10 that the marriage would be successful.