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I am submitting herewith a dissertation written by Alfred Wayne Coursol entitled "Gender Differences on the Rorschach Test." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy with a major in Psychology.

Alvin G. Burstein, Major Professor

We have read this dissertation
and recommend its acceptance:

Accepted for the Council:

Associate Vice Chancellor
and Dean of The Graduate School

GENDER DIFFERENCES ON THE RORSCHACH TEST

A Dissertation

Presented for the

Doctor of Philosophy

Degree

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Alfred Wayne Coursol

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DEDICATION

This dissertation is dedicated to my wife and best friend, Victoria Lee

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ABSTRACT

This study examines gender differences in Rorschach test responses. It begins with a short history of the masculine bias believed to be inherent in western civilization and includes a history of gender research in western psychology. In particular, it examines gender differences in real, whole human content responses [H], color responses [C], human movement responses [HM], and two composite responses: real, whole- figure, humans engaged in socially appropriate, non-malevolent, movement, or, [H,HM,+,B or N]; and, the ratio of the number of these responses to the total number of human movement responses involving real, whole-figure human content, or, [H,HM,+,B or N]/[H,HM].

Rorschach test score data were scored for a sample of 31 male, and a sample of 31 female, non paid volunteers who were all full time employees of the University of Tennessee. The Mann-Whitney U test was used to test for significance of the differences in scores between these two samples. The women in this sample were found to produce significantly more [C], [HM], and [H,HM,+,B or N] responses than the males. No significant difference were found for the number of [H] responses nor for the ratio of [H,HM,+,B or N] responses to [H,HM] responses.

The greater number of [C] responses by women is interpreted as reflecting the association between affect and color on the Rorschach test and supporting the belief that women are in more profound contact with their feelings than men are. The greater number of [HM] responses by women is interpreted as reflecting the

association between intelligence, imagination and Rorschach test [HM] responses, supporting the notion that women have a greater intellectual and imaginative capacity than men do. The [H,HM,+,B or N] response is used in this study as a measure of empathy. The greater number of these repsonses produced by women, as opposed to men, is consistent with the notion of a greater empathic capacity on the part of females. The number of [H] responses is interpreted as a measure of interest in interpersonal relationships. The lack of a significant difference in the number of [H] responses suggests that the females in this study may have no more investment in interpersonal relationships than the males in this study have. The ratio score [H,HM,+,B or N]/[H,HM] is used in this study as a second measure of empathy. The lack of a significant difference between men and women in this ratio suggests that the number of positive Social Appropriateness [+] and non-malevolent Motivational Valuation [B or N] scores do not differentiate males and females on the Rorschach test and may not be important in the measurement of empathy.

Significant differences in the number of [C], [HM] and [H,HM,+,B or N] responses is consistent with the belief that women, more so than men, may be characterized as imaginative, intelligent, empathic and in profound contact with their feelings. These characteristics are believed to reflect the manifestation of the ancient principle of feminine receptivity in the daily lives of women.

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INTRODUCTION

This paper examines gender differences on the Rorschach test. The differences found are thought to reflect a common theme. This common theme is the ancient feminine principle of receptivity which manifests as an attitude of receptive openness to the demands that life makes upon the individual. The significant gender differences in Rorschach test responses found in this study were: a greater number of color responses by women; a greater number of human movement responses by women; and a greater number of responses, by women, involving real, complete human figures engaged in form appropriate, non malevolent action or postural tension. These differences were interpreted as meaning that the women in this study were, respectively, in more profound contact with their feelings, more imaginative and intelligent, and more empathic. These qualities or abilities are believed to reflect the principle of receptivity in the following ways. An attitude of receptivity to one's environment tends to create a relationship with one's surroundings characterized by an immediate and profound sense of contact. This type of relationship is most easily and aptly communicated through feelings. An attitude of receptive openness and the contact it generates will also encourage and allow for the ingestion and assimilation of huge amounts of information, which should lead to greater imagination and understanding. Empathy may be best defined as the ability to see things from another perspective without losing one's own. Receptive and open contact would seem to encourage this.

In reviewing the research literature on gender differences and the literature on the history of women in western civilization, it becomes apparent that the foundations of western culture engender and support a subtle but profound masculine bias in value structure and belief systems. While the implications of this bias go well beyond the scope of this paper, its effect on the understanding of female and male differences is noted and remarked upon.

Each of the hypotheses presented in this paper has two parts. The first part, based primarily on the non Rorschach test research literature, reflects what the author believes to be a basic characteristic of the human female. The second part of each hypothesis is informed entirely by the Rorschach test research literature. It describes the manner in which the characteristic, in part one, is believed to influence subject responses to the Rorschach test.

Each of these hypotheses emphasize feminine, rather than masculine, characteristics. This is the result of an attempt to keep the Rorschach test interpretation of human characteristics as simple as possible while remaining consistent with previous research.

Color and human movement have each been found by some researchers to differentiate females and males on the Rorschach test. Real, whole human content responses have not been examined with respect to sex differences although some researchers have found total human content responses to differentiate females from males. Socially-appropriate, non-malevolent human movement responses involving

real, whole human figures do not appear to have been used before in an examination of gender differences on the Rorschach test.

Rorschach responses relevant to each of the hypotheses are analyzed for a group of 31 normal females and 31 normal males. All of the subjects are full time employees of the University of Tennessee at Knoxville. The Mann-Whitney U test is used to analyze the data.

CHAPTER I

LITERATURE REVIEW

A History of Gender Differences

The Masculine and Feminine Principles

It is universally accepted in western cultures that females and males exhibit "feminine" and "masculine" behaviors at a very early age, (Bem, 1983) This tendency to catalogue behavior according to an underlying dichotomy of femininity and masculinity predates western civilization (French, 1981). Ancient Chinese scholars believed that the universe is manifest through the complimentary forces of Yin and Yang. The I Ching, the Chinese "Book of Changes," identifies Yin with K'un, which is feminine and translates as Receptive. Yang is identified with Ch'ien, which is masculine and translates as Creative, (Wang, 1987). Receptivity is manifest in acceptance and adaptation. Creativity is manifest in rejection and alteration, or what westerners tend to think of as aggression.

The most common manifestations of these principles appear in relation to sexual reproduction and learning. In sexual reproduction the feminine attitude is receptive, the masculine aggressive (Stern, 1965). The female opens to receive the male, who pushes his way in. The egg is designed to accept the sperm which attacks and penetrates it. The feminine attitude toward learning is also receptive, the masculine creative. The female intuits: she opens herself up to the mystery of life in an attempt to incorporate it into her being and increase her understanding,

(Thompson, 1981). The male analyzes: he breaks things apart and manipulates the parts in an attempt to gain knowledge and increase control.

Whether the average female of today reflects the principle of receptivity in the way she responds to her environment, and especially to the Rorschach test, is the subject of this study. Before presenting the empirical evidence, however, it will be instructive to explore the historic attitude toward women in western civilization.

A major difficulty inherent in any attempt to research potential differences between women and men is that most modern cultural beliefs and practices reflect a masculine bias. While this bias is not unique to western civilization, it is supported by and reflected in its theological and philosophical foundations (Williams, 1977), i.e., in the book of Genesis, in the myth of the birth of Christ and in the philosophy of the ancient Greeks.

Masculine Bias In Western Culture

The book of Genesis promotes a masculine bias in both the nature of its god and in its story of the fall from grace. The book of Genesis chronicles the first time a surviving culture eliminated all forms of mother-goddess worship with respect to fertility and generativity (Lerner, 1986). Yahweh, the god of Genesis, has no female companions or family of origin. Unlike the old gods, who are metaphysical extensions of forces in the physical world and thus subject to physical laws, Yahweh is an abstract concept that transcends the physical. Although he appeared approximately 700 years after the sun god Ra and shares with him a monotheistic theology, the metaphysical aspect of Yahweh may reflect the ancient Hebrew's

understanding of the eastern concept of the Tao, or, That-which-Is. In creating a single god with no physical properties, the ancient Hebrews may have been attempting to integrate eastern and western thought. This would receive significant support if it could be shown that the ancient Hebrews accepted the Law of Correspondence, an ancient belief in the interrelatedness of all things. If this were true, then Yahweh may reasonably be seen as an attempt to incorporate the idea of the interconnectedness of all things and the unknowable nature of this connection into the belief in gods that was prevalent at the time. This is all speculation however. Ancient texts which may reveal a connection between the ancient Hebrews, the philosophy of the Asians, and the monotheism of the earlier Egyptians are not available. References now available which refer to him as "King of the universe" (Ashkenaz, 1984), nevertheless, make it clear that he is now identified with the masculine. This realignment of power on the metaphysical plane, which both Yahweh and the Christian god now represent, reflects a realignment of power between men and women as well. Females, under the Hebrew god, are not allowed authoritative roles in religious services (Stirling, 1955). "Female sexuality other than for procreative purposes became associated with sin and evil" (Lerner, 1984, p.10), and religious male Jews bless god every morning "for not making me a woman" (Ashkenaz, 1984).

The story of the Fall, in Genesis, reinforces this alignment of power. God makes Adam from the dust of the earth and gives him dominion over the plants and animals (Stirling, 1954). Eve on the other hand, is a derivative creation made from

Adam's rib. More to the point, however, her role in the expulsion from Eden makes it clear that she cannot be trusted to obey the "higher" laws and deny the flesh. Man has to be on guard against the subversive nature of woman (French, 1981). Rabbinic legend, on the other hand, has Lilith as god's first mate. Lilith, like Adam, is created out of the earth and she is Adam's equal. But Adam is unhappy with her because she is not willing to submit to his authority - some accounts say she refuses to take the inferior position in coitus - and Adam asked god to remove her from his sight. The lesson here is that a woman who sees herself as equal to a man cannot be tolerated and a woman who is inferior to man cannot be trusted.

When Christ was given birth to by a female the feminine role in generativity was reacknowledged. Furthermore, although excluded from the Christian pantheon of Father, Son and Holy Spirit, women are afforded a role in Christian beliefs and practices. Mary and the female saints, once they are in heaven, can be recruited to intervene with god on behalf of the faithful. Here on earth, women can become nuns. The birth of Christ, however, was a virgin birth, thus maintaining the generative superiority of the abstract over the tangible, the thought over the flesh, while reinforcing the notion of the sexual act as evil. This superiority is taken for granted in modern civilization and is difficult to refute from a logical standpoint. The flesh is corruptible, the abstract is not. The body dies, the spirit lives on. But if one goes far enough back this superiority of male over female is not seen. The male and female principles incorporated into the concept of yin and yang represent

complementary forces. The ancient principles of astrology, followed until relatively recent times, reflect this complementary dualism as well. For every male aspect there is an equally powerful female aspect. Modern western civilization has lost awareness of the Law of Correspondence, however, and without it the notion of a superior being, unconnected to the rest of creation and thus unanswerable to a greater law, seems acceptable.

The philosophy of the ancient Greeks, no less than the religious beliefs of the Jews and Christians, reflects and supports this belief in male superiority. Hesiod, in his eighth century b.c. account of the myth of Pandora, reiterates the lesson of the fall from grace first seen in Genesis (Lerner, 1986). In his recounting of this ancient myth, it is Pandora's sexual and seductive nature which results in the unleashing of evil upon the world. Nor is he unique in his condemnation of women. Plato thanked the gods, first that he was born free, and second that he was born a male (de Beauvoir, 1970). Aristotle, upon whose philosophical shoulders much of western science rests, considered the female to be a "mutilated male...without a soul" (Lerner, 1986).

These religious myths supplied the justification for man's belief in the inferior status of women well into the nineteenth century, (Shields, 1975). The functionalist school in America, incorporating the concepts of evolutionary thought (Williams, 1977), became the first organized body of authority to deny the creation myth as the explanation of woman's lesser cultural contributions (Shields, 1975).

They did not, however, reject the myth of woman's inferiority, but sought merely to understand its particulars (Williams, 1974).

Psychological History Of Gender Differences

Havelock Ellis, in his comprehensive review of the scientific literature on sex differences in 1894, noted that ideological distortions were frequently imposed on the subject and called upon the new scientific psychology to address the issue in the spirit of empirical inquiry, (Morawski, 1985). The empiricists answered his call and, beginning with Wooley's dissertation research in 1903, began looking for sex differences in mental abilities and emotional dispositions (Morawski, 1985). The female inferiority bias which covertly informed their work, however, caused Helen Thompson Wooley (1910) to say: "There is perhaps no field aspiring to be scientific where flagrant personal bias, logic martyred in the cause of supporting a prejudice, unfounded assertions, and even sentimental rot and drivel, have run riot to such an extent as here."

The growing popularity of psychoanalysis in Europe and the women's suffrage movement in this country contributed to an explosion of interest (Wooley, 1914) in the experimental investigation of such differences during the following two decades. The results, however, were less than what had been hoped for by the, largely male, psychological community. Many of the studies found only small differences, (Moore, 1922) when they found any at all. Those studies which did find differences too often pointed to a female superiority (Wooley,1914). One of the most impactful of these was a revision of the Stanford-Binet intelligence test

given by Lewis Terman in 1917. He tested over 1000 children and found a slight superiority among females (Morawski, 1985). Masculine superiority was not to be denied, however, and one year later Jastrow (1918) pronounced psychological tests, and intelligence tests in particular, to be both "partial and artificial". He argued that the processes involved in determining "the temper of the mind and the manner and spirit of it's use" are "deeper and more comprehensive" than what the tests are able to measure (Morawski, 1985). While he may have had a valid point, one can only wonder if the statement would have been made, much less published, had the tests found a slight male superiority.

Confusion, ideological bias and "professional difficulties of the women psychologists who undertook a substantial amount of the research" (Morawski, 1985, p.201, citing Rosenberg) led to a waning of enthusiasm so that by 1930 there was little ongoing research being conducted into sex differences (Shields, 1975). Explanations of the failure to find "clear and significant differences" had come to center more and more on a belief in the subtle and complex nature of the underlying causes of human behavior. This view was accompanied, in America, by a growing belief in the need for control over human nature (Morawski, 1985). This need for control was believed to be particularly strong with respect to marriage, family and child rearing (Morawski, 1985), areas of influence generally considered to be the domain of the wife and mother. Eve and Pandora could not be trusted to stay out of trouble and, apparently, neither could the American housewife. A full exploration of the motive(s) behind this growing desire for control are beyond the scope of this

study. One may wonder in passing, however, how much of it was a projection of an unconscious fear of the increasingly powerful and dangerous discoveries of early twentieth century physics, spurred on by the industrial revolution. Whatever its motives, however, the growing belief in the need for control over human behavior influenced psychological gender research by directing it toward the establishment of "healthy" female and male norms. It was in this atmosphere that Lewis Terman and Catherine Miles published their attempt to measure sexual temperament by accumulating test items on which males and females differed. Although it was only partially successful (Terman and Miles, 1936) this pioneering effort became a model of test scale construction for the next twenty-five years (Morawski, 1985). The major tests of masculinity-femininity (M-F) that came out of this discipline include the M-F Scales of the Strong Vocational Interest Blank and the Minnesota Multiphasic Personality Inventory, the Gough Femininity Scale, and the Guilford Masculinity Scale (Constantinople,1973) These scales provided psychology with a relatively consistent view of normative behaviors but were vulnerable to cultural bias and subject faking (Morawski, 1985). In spite of these problems some researchers developed new rating scales which asked the subject to evaluate self and others, thus forming a baseline of normative behavior and/or beliefs about behavior, from which deviations could be assessed. Other researchers, however, turned to the symbolic representation techniques of projective tests (Morawski, 1985). The Rorschach test (Stavrianos, 1942), projective drawing tests (Frank, and Rosen, 1949) and the Thematic Apperception test (Leopold Caligor, 1951) represent three

early uses of these techniques in sex differences research. Like the tests that came before them, however, the projectives produced little that the, largely male, psychological community considered reliable or valid with respect to gender differences (Felzer, 1955).

Meanwhile, psychoanalytic and socially informed theorists were attempting to supply the causative factors that the experimentalists had ignored. The belief that gender differences were subtle and complex was reinforced by the depth psychologists' belief that potential gender differences, at least the important ones, were non conscious (Morawski, 1985). Psychoanalytic theorists such as Freud and Deutsch proclaimed a biological basis for these differences, while doing little or nothing to contradict the myth of female inferiority. Erik Erikson, a student of Deutsch's, was the first to accept the biological basis of sex differences while professing a belief that women were different but not inferior (Williams, 1977). Karen Horney, a psychoanalytic feminist, took the separate but equal perspective a step farther and showed that cultural factors were at least as important as biology in determining strengths and weaknesses (Horney, 1939). This perspective received support from Margaret Mead's anthropological studies. Working extensively with three primitive island cultures that exhibited radically different sexual norms, she was "forced to conclude that human nature is almost unbelievably malleable, responding accurately and contrastingly to contrasting cultural conditions" (Mead, 1935). However, while Mead's observations and conclusions fueled the fire against biological determinism she reinforced the notion of determinism in human affairs

substituting cultural for biological and warning that "the rhythms of human development, patterned during a million years, are ignored at our peril" (Williams, 1977, p.105). Women, Mead appeared to be saying, were not inferior to men but neither were they equal, they were simply different, and that difference was conditioned over a million years of human development.

By the 1960s, neither the experimentalists nor the depth psychologists had been able to reach a consensus about the nature of male-female differences. The constructs of the M-F scales had not varied much over the years (Morawski, 1985) and their usefulness was being called into question (Ratliff and Conley, 1981). College students had become adept at predicting the appropriate answers and an attempt to produce a more subtle M-F scale had come to naught (Nichols, 1962). The very concept of a unipolar masculinity-femininity dimension came under attack by Constantinople (1973), who proposed the concept of independent dimensions for femininity and masculinity. Depth psychology, while moving from the blatantly male-normative theories of Freud to the more separate but equal pronouncements of Erikson and Horney, had also failed to provide a consistently valid and reliable view of sex differences.

This failure of past methodologies to define male and female differences, either biologically or psychologically, and the changing socio-political climate of the 1960s, in which educated females were becoming more assertive and their male counterparts more sensitive, (Reece, 1964) encouraged gender researchers to look elsewhere. Social role and cognitive developmental theories of behavior came into

prominence. Into this atmosphere came the concept of androgyny as a new model for healthy sexual identity. While touted by some as a new ideal for assessing and evaluating behavior, the concept had little to do with sexuality (Storms, 1980). It was envisioned by its author as a transitional concept (Bem, 1983) aimed at replacing the biological concept of male-female differences with an emphasis on the cognitive differences engendered by the different social and cultural roles that men and women play. In doing so, androgyny helped shift the focus from an emphasis on biological sex differences to an emphasis on social and cognitive differences, especially those thought to be critical to competition in the workplace (Morawski, 1985 citing Colwill 1982).

The growing popularity of social and cognitive theories during the sixties was accompanied by a resurgence of interest in female-male differences (Constantinople, 1973). Researchers again called for sex differences research at an accelerated pace (Goodman, 1973). By 1974, with the publication of Maccoby and Jacklin's celebrated review of the literature, sex differences had once again become a popular area of research (Nicholson, 1984). Interest in what was to become known as "women's studies" also took off during this period. In 1975 the Annual Review of Psychology had, for the first time, a chapter on the psychology of women (Seiden, 1976). And the following decade produced an increase in journal articles on sex and gender (Rosegrant, 1984).

Once again, however, sex differences research promised more than it eventually delivered. Early enthusiasm produced a spate of research articles but as

findings failed to meet expectations enthusiasm waned and individual research dropped off. Sex differences, when they were found, were once again thought to be insignificant (Belle, 1985). The incidents of cultural bias and subject faking, which had plagued sex difference research throughout its entire history, remained problematic.

By the mid 1980s the shift in the political climate, from liberal to conservative, had begun to have consequences for both the women's movement and the types of gender research it encouraged, (Mednick, 1991). The equal rights amendment was all but dead and sex differences were seen by many to be an "over-researched field littered with contradictory findings" (Nicholson, 1984) yielding a random, and all too often frivolous, assortment of differences (Deaux, 1985).

While individual studies of sex differences were declining in number, however, reviews of sex differences were on the rise. The most comprehensive of these, the Maccoby and Jacklin (1974) review may also have been the most controversial and the most influential in promoting further research on male female differences. Based on a review of 1,400 studies, Maccoby and Jacklin concluded that sex differences were either small or non existent in all but four areas of human endeavor: mathematics, spatial abilities, verbal abilities and aggression. This sparked a controversy concerning both the quality of their review and the validity of their findings. They were criticized for wide variations in both the quality of the studies examined and in the criterion used to evaluate the results; for omissions of relevant studies, and for discrepancies between the text and the data presented in the

tables (Block, 1976). It was also pointed out that while many sex differences do not manifest clearly until after puberty, Maccoby and Jacklin drew their conclusions based largely on tests performed with children. But, more important than the controversy concerning their results and their manner of arriving at them, Maccobby and Jacklin made researchers aware of the wealth of available data relating to sex difference (Eagly, 1995). This, along with the questionable methodologies they employed may have contributed more than anything else to the search for better review techniques and more methodologically sound studies of sex differences. This search led, a few short years later, to the development of quantitative methods that could be applied to amalgams of previous research studies.

By the late 1970s, narrative reviews like those of Sherman (1971), Maccoby and Jacklin (1974) and Parlee (1975) began to be replaced by reviews based on quantitative or "meta-analytic" techniques. The power of these techniques provided researchers, for the first time, with a quantitative method for comparing different studies with dissimilar attributes. As a result, extraordinarily large amounts of data pertaining to male-female differences were able to be integrated and synthesized (Eagly, 1995).

Since their emergence in the late 70s, quantitative or meta-analytic techniques have examined sex differences reported in thousands of studies of cognitive abilities and social behaviors. In one of the earliest of these Hall (1978) analyzed 75 studies examining cognitive differences in the recognition of non verbal cues and found a significant female superiority that did not vary significantly with

the size of the sample, the sex or age of the sender, or the age of the judges. Eagly and Carli (1981) examined 148 studies of conformity and influenceability undertook between 1949 and 1977 and concluded that the female subjects in these studies were more influenceable than the male subjects and more conforming than the males in group pressure situations. Eisenberg and Lennon (1983) undertook a review of all of the relevant empirical research available at the time that examined sex differences in empathy. Using meta-analytic techniques they concluded that sex differences in empathy were in large part a function of the measures used to define empathy and that many important issues were left unresolved. Basing their analysis on the framework that role theory provides, Eagly and Crowley (1986) examined gender differences in helping behavior. They found gender differences in helping behavior to be extremely inconsistent across studies and capable of being predicted by various attributes of the study including the setting, the presence or absence of surveillance, the availability of helpers, the manner in which the task was presented, competency to perform the task and the danger involved. Sex differences in aggression were analyzed by Eagly and Steffen (1986) and found to vary consistently with the subject's expectation of whether the aggression would result in physical or psychological pain to the recipient and with the expected consequences of the aggression for the initiator. Sex differences in the emergence of leaders in leaderless groups was found to vary with both the length of the group and the tasks around which the group was formed (Eagly and Karu, 1991). As might be expected, males emerged as leaders in task oriented groups that did not require

complex social interaction. Women emerged as leaders in socially oriented groups and as social facilitators in groups requiring complex social interaction to perform the task. Oliver and Hyde (1993) performed a meta-analysis on 177 studies of sex differences in sexuality and found large differences in both masturbation (males do it more often) and in attitudes toward casual sex (males are more permissive). Both of these differences, however, appeared to be decreasing over time.

While meta-analytic techniques have provided increasing evidence of apparent sex differences (Mednick, 1991) the more important contribution may be their ability to identify those differing attributes of the various studies which, in each case, produce much of the variance. This has led to a recent shift in emphasis (Eagly, 1995) from an attempt to discover whether or not there are sex differences in various behaviors and abilities to an attempt to discover why inconsistencies across sex difference studies is so often the norm and where they come from. A particularly lively debate that meta-analytic techniques have entered is the question of mathematical ability. Benbow (1988) in a review of Scholastic Aptitude Tests (SAT) given over a 16 year period found a consistent sex difference favoring males on the mathematics section. Based on this data, he concluded that males are superior to females in mathematical reasoning. Hyde, Fennema and Lamon (1990) came to a somewhat different and more detailed conclusion. Performing a meta-analysis of 100 studies of mathematical performance they found a slight female superiority in elementary and middle school, a moderate male superiority in high school that increased during the college years and was greatest in adulthood. In a

similar study, Feingold (1988) found male superiority only at the upper levels of high school math. While these findings do not contradict the Benbow results, they do give a different slant to possible explanations. More to the point, the meta-analysis suggested that the "superiority in mathematical reasoning" conclusion is misleading inasmuch as women were found to be superior in computation, no differences in understanding were found and the superiority in problem solving that Benbow discovered is not evident until high school. Moreover, Feingold (1988) found that most cognitive gender differences appear to be declining over time.

Meanwhile, another lively debate joined recently by meta-analytic researchers is the question of verbal ability. While female superiority in verbal abilities has been one of the more stable findings in sex differences research, a meta-analysis of 165 studies, (Hyde and Linn, 1988) found only small differences in overall verbal abilities and no substantial sex differences in detailed analyses of vocabulary, reading, comprehension and analogies. The only consistently large female superiority to be found in this study was in measures of speech production.

Where gender research will go from here, or even whether it will go on from here is unclear. The question of whether or not to study gender differences has been debated since the 1980s (McHugh, Koeske and Frieze, 1986). Both the political and scientific value of gender based research have been considered (Baumeister, 1988) without any apparent consensus having been reached. Meta-analysis, in spite of its popularity and the increased construct and external validity it offers (Eagly and Wood, 1990), has not been unanimously received. Attitudes

towards its efficacy reflect the views of the two camps into which modern day feminism seems to be divided. One view holds that it contains within it the promise of a genuine and significant advance in the study of gender; the other that it provides merely one more in a long line of dead-end sex difference arguments (Mednick, 1991).

These two camps, reflecting essentialist and social constructionist viewpoints, are engaged in an on-going debate concerning the etiology of gender differences. The essentialists view males and females as biologically and fundamentally, i.e. essentially, different. Social constructionists view gender as socially and culturally determined. Essentialist theories tend to maximize sex differences and find their support in qualitative studies. Constructionist theories tend to minimize sex differences and find their primary support in quantitative studies. These two viewpoints express what Hare-Mustin and Marecek (1988) call, respectively, "alpha" and "beta" biases.

Essentialism, by whatever name, has been around for a long time and represents what has, throughout most of western history, been the prevailing view. Social constructivism is a post-modernist view that gained popularity in the 60s and 70s. Social constructivists contend that the basic premise of logical positivism (that reality is fixed and observable, i.e. unaffected by the observer) is false. Constructionist theory holds that science is not value free, that gender differences are social constructs assumed without adequate evidence to support a status quo of unequal power and opportunity, that psychological research always has political

implications, and that there is always a relationship between the researcher and the researched. They believe that situational factors and group memberships play a key role in observed differences between the sexes and it is this group in particular which seems to be using the power of meta-analytic techniques to uncover the various attributes of psychological studies that lead to false conclusions about male and female behaviors.

The balance of political power today appears to reside with the essentialists. They appear to hold the upper ground while the social constructionists fight to correct what they consider to be some of psychology's major shortcomings: the lack of population diversity reflected in the over-representation of male college sophomores as research subjects, the masculine bias which offers the adult male as the psychological norm, the lack of field and naturalistic research and, of course, the failure to take into account the influence on gender specific behavior of the cultural institutions which support it.

While the feminist-gender battle lines appear to have been drawn, neither side has been able to claim clear and consistent victories. The essentialists have the status quo of the male power structure on their side. The constructionists have ancient knowledge and modern physics, the grandchild of Heisenberg's uncertainty principle, on their side. Given their diametrically opposed viewpoints and their generally non overlapping empirical methodologies these two groups are not likely to come to a consensus anytime soon.

In spite of the many problems attendant to gender research over the past century some clear and consistent differences have emerged. There appears to be strong evidence that males excel in tests of field independent activities while females excel in field dependent activities (Witkin, Lewis, Herzman, Machover, Meisner and Wapner, 1954; Sherman, 1971). Meta-analytic research appears to have uncovered a clear and consistent female superiority in decoding non-verbal cues (Hall, 1978). Others make similar claims for an adult male advantage in mathematics (Bayley, 1967; Benbow,1988). Males do appear to be more aggressive (Maccoby and Jacklin, 1980), especially in situations involving physical violence and danger to the initiator, (Eagley and Steffen, 1986). The average female tends to mature more quickly in most respects and appears to live a longer, healthier, and happier life, (Thorpe and Swartz, 1966; Williams, 1977).

This paper presents what the author believes to be among the most basic and consistent of the gender differences that can be measured on the Rorschach test. It focuses on feminine, rather than masculine, characteristics in an attempt to keep the independent variables as simple as possible while validating what appears to be the most consistent conclusions found in previous sex difference research on the Rorschach test. This focus on the feminine also reflects the bias of the author, who believes that a lopsided belief in male superiority has prevailed for so long that it is time to find areas in which females may be superior.

The Rorschach Test and Perception

Perception is the end result of the interaction between a stimulus and the process which supplies meaning to that stimulus. Sensory apparatus record the stimuli and the ego initiates a chain of associations leading to a decision about what the stimulus means and how it should be responded to. The nature of this chain of associations depends upon the nature of the receiving stimulus and the nature of the subject's experiences with similar stimuli. The ways in which an individual records and assigns meaning to stimuli will form characteristic patterns which reflect both the strengths and weaknesses of the ego and the sense of self born of responses to meaningful stimuli in the past. Consequently, it should be possible to gain some understanding, of the ego and self, from a study of how the individual supplies meaning to sensory stimuli.

The difficulties attendant to studying a subject's response to stimuli are, essentially threefold. The stimuli being attended to must be reasonably well isolated from competing stimuli. The stimuli must be invariant across every test situation. And, the stimuli must be both ambiguous enough that it does not foster immediate recognition and familiar enough that the meanings supplied are not overly peculiar. Since the way in which the ego supplies meaning is not believed to vary with the stimulus, any psychological test which satisfies these three conditions should be capable of telling us something about how an individual supplies meaning to the objects in the world about him.

In the administration of the Rorschach test the subject is shown ten plates. Each of these plates represents an isolated stimulus event which is invariant across every test situation. In the interpretation of these "chance forms" (Rorschach, 1951) the test subject must compare the visual sensations presented to him on the plates with previously experienced sensations and their meanings. The ambiguous nature of the blot insures that the subject, in deciding "what this might be," must call upon more than mere recognition. He must interpret the blot in the light of past experience. He must compare the characteristic features of the blot - form, color, shading, etc. - with his memory of previously identified sensory stimuli and come up with a reasonable fit. At the same time, each blot enjoys a certain vague familiarity to most people that allows for a set of norms to be established. Variables reflecting each subject's search for meaning can be compared with those of every other subject and deviations from the norm can be measured and interpreted.

There is no reason to believe that in saying "what this might be" the Rorschach test subject is doing anything qualitatively different from what he does every time he identifies or assigns meaning to unfamiliar objects in his environment. An analysis of how the individual interprets and responds to the Rorschach test figures should, therefor, reveal significant information about how that individual interprets and responds to the world about him. The large number of variables scored for the Rorschach test and the fact that there is no clear and consistent one-to-one correlation between any one score and a specific human characteristic attests

to the complex nature of both the Rorschach test and the process by which human beings assign meaning. In spite of this, however, there is some evidence linking, in a general way, single Rorschach test variables with specific human characteristics, some of which may differentiate the sexes. Many of the most consistent and impressive of the Rorschach test research findings have involved single variables. Human Content, Human Movement and Color are the responses most often found to differentiate males and females on the Rorschach test. Furthermore, Rorschach test researchers who have found significant gender differences with these response variables have generally concluded that females produce more of them than males.

Hypothesis I: Human Content On The Rorschach Test and Interpersonal Intimacy

The first hypothesis which this paper will present is that women produce a greater number of Rorschach test responses involving real, whole-figure, human content than men do. A greater production of real, whole-figure human content responses, by women, is consistent with the belief that women are more invested in intimate personal relationships than men are.

Women and Intimacy

There is considerable evidence in support of the belief that women are more invested in intimacy than men are. A number of studies have found that girls are more interested in the personal qualities of relationships than boys are and that they are more comfortable with intimacy (Williams, 1977). They show this interest in

others from an early age (Sherman, 1971) including making more eye contact beginning in infancy (Lewis 1985). Adult females report a much greater variety of interests in other people than adult males do (Strong, 1936). They also report as friendlier and more social than males (Felzer, 1955), and they appear to be more satisfied with their intimate relations, especially those that provide social and emotional support (Williams, 1977). There is evidence that intimate social relationships are dominant in women's thinking overall (Pratt, Golding, Hunter and Sampson 1988) and that a woman's sense of self is more dependent on her relationships with others than is a man's (Carlson, 1971; Lykes, 1985). Women are both more adept at recognizing non verbal cues (Brody, 1985) and more willing to ignore them for the sake of harmony (Deaux, 1985). Morality for the average female appears to be based on an ethic of "care" while for men it is based on an ethic of "rights" (Gilligan, 1982). Finally, while men can be nurturing, cross-culturally it is women who generally take on that role (D'Andrade, 1966).

Human Content On The Rorschach

The objects in our environment that we are the most interested in will tend to be the ones that draw our attention. This is no less true when the environment we are speaking of is the Rorschach test. Consequently, that aspect of the Rorschach which is most indicative of the subject's characteristic attitudes and feelings about other people is the Human Content variable. (Allison, Blatt and Zimet, 1968; Beck, 1961; Hertzman and Pearce, 1947; Klopfer, Ainsworth, Holt and Klopfer, 1954; Maymon, 1967; Phillips and Smith, 1953; Rapaport, Gill and Schafer, 1986;

Rorschach, 1951; Weiner, 1966). The amount of human content in a record can serve as an index of that individual's interest in others. The more human content is de-emphasized in a record the more likely it is that the individual tends to withdraw and isolate himself from others (Phillips and Smith, 1953; Allison, Blatt and Zimet, 1968). The failure to produce any human content in a record suggests a pathological lack of empathy, or interest in others (Weiner, 1966). A large number of human content in a record, however, does not guarantee good interpersonal relationships. The capacity to form intimate social contacts must be confirmed by other determinants, most notably the number and quality of color responses (Rapaport, Gill and Schafer, 1986), the number and quality of kinesthetic movement responses (Allison, Blatt and Zimet, 1968), and the manner in which humans are seen on the Rorschach. Color and kinesthetic movement responses will be dealt with in a later section of this chapter. The way in which human content responses reflect the individuals characteristic way of perceiving others will be outlined below.

All human content interpretations indicate an interest in and sensitivity to the actions and feelings of others (Rapaport, Gill and Schafer, 1986). But only the number of those which represent whole figures that could actually exist cast light on the individual's ability to form warm, interpersonal relationships. Human content interpretations that involve human-like figures that could not exist in the real world do imply an interest in others but it suggests a cold, detached interest which mitigates against warm, sympathetic contact (Maymon, 1967) and fosters a tendency toward withdrawal and isolation from the very people one is interested in (Phillips

and Smith, 1953). Content interpretations that involve only part of a human figure can signal a wary, cautious interest in others (Rapaport, Gill and Schafer, 1986). Several non-real or part-human figure interpretations, in a record without a greater number of real, whole human figures, may reflect a high level of social anxiety (Phillips'and Smith, 1953). Or, it may signal a harsh and critical attitude toward the self and others (Klopfer, Ainsworth, Klopfer and Holt, 1954) accompanied by a constricted (Beck, 1961) and fragmented capacity for object relatedness (Allison, Blatt and Zimet, 1968).

Sex Differences In Human Content

A few investigators have examined sex differences on the Rorschach test with respect to human content. Abel and Hsu (1949) studied normal, American and China born, Chinese adults living in America. One of the goals of their study was to examine sex differences among Chinese subjects born in the United States and Chinese subjects born in China. All of the Rorschach tests were administered by three female examiners to reduce sex effects of the examiner. Their attention to examiner sex effects is laudable. It would have been even better, however, to have equal numbers of protocols administered by one male and one female examiner. Examiner effects were further reduced in this study by having one person, also a woman, interpret all the records. The small size of the sample: 25 males and 31 females is a methodological weakness which is made worse by dividing the subjects into four groups: 15 China-born males (CBM), 12 China-born females (CBF), 10 American-born males (ABM) and 19 American-born females (ABF). No statistical

manipulations were performed on the data. The authors looked only at ratios and percentage. Consequently, no statement can be made as to the level of significance of the findings. Furthermore, the test subjects were not matched for age, IQ or educational level and so there is no way of knowing what influence these variables may have had on the results. Differences were reported in terms of the percentage of total responses that involved human figures in each of the four groups. These percentages of human figures in the Rorschach test protocols of both China-born males and China-born females was 13%. This statistic for the American-born male 15%, not much higher, but for the American-born female it was 23%. This difference would appear to be sizeable, even in the absence of significance tests, suggesting that the latter group is more interested in other people than either of the other three groups. The methodological weaknesses of the study, however, make it impossible to know what factors were influencing these results. The equal percentages of human figures found between men and women in the China born groups suggests that whatever is being measured here is highly influenced by culture.

Thorpe and Swartz (1966) gave the Holtzman Inkblot Test to 360 normal children approximately 6 to 13 years of age. Equal numbers of boys and girls were matched for age, grade level and socio-economic class. All of the students were from the middle and upper middle classes. There were no Blacks and no Latin Americans. Consequently, the generality of their conclusions is severely limited. The authors used a two way analysis of variance to compare groups by age and sex.

Analysis of variance requires normally distributed population samples which are not in evidence here and may reduce, but not necessarily destroy the validity of their results. They found that their female subjects gave significantly more human content responses than their male subjects. This difference was reported as significant at the .05 level.

Ames (1960), in a longitudinal study of children from ages 10 to 16 found the percentage of human content in the records of females to be higher than that of males at every age except 11 years old. A moderate sample size of 35 females and 30 males were tested yearly from age 10 to 16. Administration and scoring information was not disclosed. Nor was information concerning statistical manipulation of the data, other than reporting that linear "measures of variability" were computed. Subjects were apparently matched for IQ and most were children of professional parents. No significance tests were run, possibly because the authors were more interested in longitudinal patterns than they were in "significant differences".

In a related study Frank and Rosen (1949) examined male-female differences in object choice by presenting subjects with incomplete drawings which they were told to complete. The subject population was large, 150 males and 150 females, but no matching was done. Three scorers were used. Their sex was not reported but inter-scorer correlations in the range of .84 to .90 were. They found that women drew more human figures than men and, in fact, drew more living creatures in general than did men.

The four studies cited above all suffer some methodological weaknesses. All suffer from a lack of reported methodological data. None of the results can be safely generalized to an outside group. Two of the studies do not report statistical manipulations more complex than percentages, means and standard deviations. Nonetheless, each study reported findings that can be reasonably interpreted to suggest a greater interest in other people by their female subjects. While only one of the studies provided significance tests of their results, a common sense estimate of significance is supported by the fact that they all voiced similar conclusions and that there do not seem to be any test results suggesting that males are more interested in others than females are.

Hypothesis II: Color On The Rorschach Test and Affective Responsiveness

The Second hypothesis this paper will examine is the belief that women produce a greater number of color responses on the Rorschach test than men do. A greater production of color responses is consistent with the belief that women enjoy a greater affective awareness than men do.

Women and Affect

Herman Rorschach defined the color response as a response based either completely or partially on the basis of color. He interpreted it as a reflecting those aspects of the personality responsible for emotional adaptability and rapport (Rorschach, 1951). This belief "that subjects behave toward the colored inkblots as toward affective stimuli" (Rappaport, Gill and Schafer, 1986, p. 338) is shared by

most Rorschach researchers and almost all Rorschach clinicians. It is supported by theory, by common experience and by empirical evidence.

Feelings, emotions and affect, used interchangeably, are considered by psychoanalytic theorists to be drive derivatives. At their most basic level they are associated with the pleasure of drive satisfaction and the unpleasure of drive frustration. To go beyond this is to invite controversy. The exact nature of affect, its specific relationship to instincts and even how many basic emotions there are is in question. What does not appear to be in question is that emotions are primary process phenomenon with a direct, or very near direct, link to drives. Colors, being images, are also primary process phenomena and, like feelings, may be directly linked to drive satisfaction. Colors are pleasant and unpleasant, suggesting a link to both drives and affects. Colors are easily identified and may have been used by primitive cultures to differentiate the edible plant from the dangerous one, for example, and so aid in drive satisfaction. Skin color, although it comes in various hues, is unlike anything else in the environment and may be the newborn infant's primary means of identifying its mother. Color perception is immediate and tends to dominate form perception. Emotions tend to be immediate and can overwhelm thought processes. The power of color vs form to demand our attention is easily demonstrated by walking into a room that contains nothing except a black and white line drawing with a splotch of color on it. The observers eye goes immediately to the color, before recognizing the form. Color and affect thus have

in common an immediate, spontaneous quality, a primary process nature and a direct, or near direct, link to drive satisfaction and frustration.

The association between color and affect has been so often recognized by poets and laymen that it is now part of our lexicon. Someone in a depressed mood is said to be "feeling blue". "Seeing red" characterizes an individual in the grip of rageful anger. Nausea is referred to as "feeling green," and when the source of the nausea is overwhelming desire for what another has, one is said to be "green with envy". Interior designers use colors to create moods and no less a thinker than Goethe used color preference to create a psychology of personality.

Herman Rorschach was no doubt aware of this common connection between color and affect and this may have influenced his decision to make color one of only four determinants scored in his early work with the inkblot test which bears his name (Oberholzer, 1969). His conclusion that emotional factors are influential in the color response, however, was arrived at empirically. Rorschach divided his subjects into several diagnostic categories which included various categories of normal, neurotic and psychotic. He found that all of his cases, in which a depressed mood was a significant factor in establishing the subject's diagnostic category, showed few color responses while those cases with elated moods produced many color responses. Rorschach did not report on the significance levels or even on the specific statistical tests by which he compared his various subjects and so it cannot be said with any degree of reliability that his conclusions are valid. The

number of comparative tests he ran, however, is impressive as is the consistent nature of his results.

Since Rorschach's time, numerous investigators have examined the correlation between Rorschach color responses and affect. In a comprehensive review of this literature George Frank (1956) found that, while it is not possible to say much of anything definitive about affect and the color response - due in large part to the difficulty involved in saying anything definitive about affect in general - "colors do seem to have affective connotations". Siipola, (1950), in an experiment designed to measure her female subject's first, spontaneous response, found that color on the Rorschach test plates increases the likelihood that emotional attitudes of some sort will be aroused during the response process. Wagner (1978) believes that these color responses represent "felt emotion" originally stimulated by contact with others. Klopfer (1954) also emphasizes that color responses reflect those emotions characteristic of the subject's response to actual situations. Piotrowski (1947) suggests that "color responses always indicate a desire for an exchange of pleasure or pain with some other person". Samuel Beck (1961) understands the color response as reflecting an individual's capacity for feeling in contact with his or her world. In the Beck scoring system the number of color responses in a record gives an indication of both the fluidity of affect experienced by the subject and of the amount of energy and initiative that he or she generally brings to important tasks. Schachtel (1943) and Shapiro (1956) emphasize the passive and immediate nature of both the affective experience and the psychic organization involved in the color

response. From a clinical perspective color responses with good form quality can indicate a "sympathetic and loving person who can also assert himself when crossed" (Singer and Brown, 1977).

Sex Differences In Color Responses

Several investigators have found sex differences in the number of color responses to the Rorschach. Rorschach himself (Rorschach, 1951), found that women produced "somewhat more" color responses than their male counterparts. Unfortunately, like most studies of the time, and like many studies today, Rorschach did not supply methodological data sufficient to evaluate the validity of his findings.

Hays (1952), in one of the more methodologically sound studies found that his women subjects produced significantly more color responses than the men. Hays used as subjects 246 normal individuals who had applied for jobs either as institutional or clerical workers; all had IQs between 95 and 111. A t-test determined that the male and female groups did not differ in total responsiveness. Data was manipulated in accordance with the pattern tabulation method developed by Chronbach (1949), which is particularly suited to Rorschach test variables.

In another reasonably impressive study of sex differences, Rice, Greenfield, Alexander and Sternbach (1976) studied responses of 36 pair of monozygotic twins, 18 pair of dizygotic same-sex twins and 29 pair of dizygotic opposite-sex twins on the Holztman inkblot test. Subjects were matched on educational and socio-economic factors. There were equal numbers of males and females in each group and there were no between-group mean age differences. Total responsiveness was

not an issue as there is only one response given per card on the Holtzman. The authors used a two factor analysis of variance and found a significant difference in the number of color responses (women produced more) produced by the males and females. When just the dizygotic group alone was examined, however, there were no significant differences in color production. Thus it would appear that sex differences in color production on the Holtzman test are strongly influenced by environmental factors.

Ames (1971), in the longitudinal study referred to in the previous section on human figure responses, also measured the number of color responses produced by her subjects each year. As mentioned in the earlier section, Ames did not provide a methodology section in her report and so the validity of her findings is not confirmable. Moreover, she did not report significance levels and apparently did not run tests of significance. She did however report mean responses for each subject at each age level, 10 through 16 years old. She reported that her female subjects produced more color responses at every age.

Another study, also mentioned previously, that did not publish a methodology section was that of Abel and Hsu (1949). In a Rorschach test study of Chinese males and females living in the United States they found that the female's average sum C score was almost twice that of the males. It is difficult to know what this means for total color production because Sum C does not weigh all the color scores equally. Furthermore the FC to CF ratio was lower for the America-born females than for any other group, and it was lower for the China-born females

than for the China-born males. This would tend to increase the Sum C score of the females without necessarily increasing the overall production of color responses. Abel and Hsu, nevertheless, conclude that this was evidence that the female subjects were more reactive to external stimuli than were the males.

In a study that was reasonably sound from a methodological standpoint Felzer (1955), examined 26 Rorschach test variables from a subject population of 100 male and 100 female undergraduates. The generalizability of the study is limited because college students are not likely to provide an adequate representation of the population at large. On the other hand, the Liberal Arts, Teachers and Business colleges were equally represented in the subject sample and the two groups were matched for age and psychological health. All the tests were administered and scored by the author thus reducing examiner effects. The Klopfer system was followed. Chi square was used as the test of significance because of the skewed nature of the data. Subjects were compared on 26 Rorschach test variables. A greater preponderance of form dominated color responses was one of two variables that differentiated males from females in his sample.

This author was able to find only one study which contradicted the trend for females to give more color responses, (Bierri, Bradburn and Galinski, 1958). These authors used a highly selective group of subjects: undergraduates from Harvard and Ratcliff. They also used a modified Rorschach test consisting of 16 large details, presented twice for a total of 32 responses per subject. These authors were not looking specifically for sex differences on the Rorschach test and it is difficult to

know what their results mean. There does not appear to be any basis for interpreting these findings within the context and meaning of color responses on the Rorschach test.

The color studies cited above vary considerably in the methodological information reported. Different statistics were used with different populations examining different aspects of this question. Some of the findings contradict others. None of the conclusions are safely generalizable beyond their own samples. Nonetheless, as a group, they provide some support for the contention that females produce more color responses than males.

Hypothesis III: The Human Movement Response and Intellectual and Imaginative Capacity

The third hypothesis is that women produce a greater number of human movement responses on the Rorschach test than men do. The production of human movement responses on the Rorschach test is believed to reflect the capacity for imagination and general intelligence.

Women, Imagination and Intelligence

Helene Deutsch believed women had a greater capacity for imagination because of their receptive nature. (Deutsch, 1944). Ames (1960) appears to have found evidence of this in a greater originality in girls' responses to the Rorschach test. Able and Hsu (1949) also found support for this in the greater variety of responses produced by their female subjects. Witkin (1954) found that women used

a wider variety of problem solving techniques in numerous tests of field dependence. Bieri and Blacker (1956) found that variability of response generalizes across all situations, suggesting that this greater variety of responses represents a tendency at play in any situation.

The concept of intelligence, while predating the advent of intelligence testing, has never achieved consensual validation or even a clear definition. In spite of the vague and controversial nature of this construct, however, various authorities have stated that one or the other of the sexes possesses it to a greater degree than the other. Before the turn of the century, the intellectual inferiority of women was taken for granted (Strong, 1936). The widespread use of intelligence tests dispelled this notion, at least for a time, by finding only small differences between men and women on most tests of specific intelligence (Terman and Miles, 1936) while giving the edge to females in "measures of general intelligence" (Wooley, 1914). Lewis Terman lent substantial authority to this latter contention when, in 1917, he tested over 1000 children with his revision of the Binet-Simon Intelligence Scale and found girls to be slightly superior to boys (Morawski, 1985). While it can be argued that Terman's results reflect merely an earlier maturation rate on the part of girls, it has not been shown that boys ever catch up (Sherman, 1971). Furthermore, it is fairly well established that women excel in verbal abilities (Maccoby and Jacklin, 1974) and Verbal Intelligence may be the best indicator of overall intelligence. In spite of massive evidence to the contrary, however, a belief in the innate, intellectual inferiority of women is still quite persistent (Sherman, 1971).

The Human Movement Response On The Rorschach

Human movement (HM) is said to be the most significant (Klopfer, Ainsworth, Klopfer and Holt, 1954), most controversial (Phillips and Smith, 1953) and most difficult to understand (Piotrowski, 1947) of all the Rorschach test variables. Nonetheless, it is frequently interpreted as indicative of a rich fantasy life (Kleinman and Higgins, 1966). The empirical research supporting this interpretation is impressive (Singer & Brown, in R.O., 1960; Exner, 1986). Herman Rorschach discovered that his imaginative subjects gave more HM responses (Rorschach, 1951) and Samuel Beck, one of the first Rorschach test scholars in America (Beck, 1972) believes that Rorschach's interpretation of human movement, as essentially fantasy activity, was an achievement equal in magnitude to the development of the test itself (Beck, 1951). Beck himself interprets human movement as reflecting the use of imagination to both understand one's environment and to solve problems. The typical human movement response suggests a freedom of self-expression (Phillips and Smith, 1953), relatively free access to fantasy activities (Klopfer, Ainsworth, Klopfer and Holt, 1954) and a capacity for "inner creation" (Schachtel, 1966, p194). Margaret Baker, in a study of creative thinking, links HM production to an "artistic, associative, intuitive creativity (Baker, 1978 p539). Martin Mayman says that the HM response "seems to draw more heavily upon fantasy than does the usual non-M response (Maymon, in R.O. 1960, p 234). It may be that the human movement response is itself a creative act (Beck, 1951; Allison, Blatt and Zimet, 1968).

The human movement response appears to involve the element of reasoning and has been linked to intelligence in several empirical studies (Exner, 1986). Rorschach (1951) found that the number of human movement responses varied directly with the "productivity of the intelligence" in his normal subjects. Samuel Beck found intelligence to correlate with both the number of human movement responses and with their originality (Beck, 1951). Klopfer, Ainsworth, Klopfer and Holt, (1954) contend that a human movement of good form quality is a sign of intellectual capacity. Rappaport, Gill and Schaeffer (1968) more cautiously, relate human movement production to "a considerable flexibility, versatility, and wealth of both associative resources and processes and perceptual organizing abilities". Phillips and Smith (1953) associate high intelligence with an increase in the number of total responses but note that this increase in R is accompanied by an increase in human movement.

From a theoretical standpoint, the correspondence between intelligence and imagination appears straightforward. The most immediate response to any situation is an emotional one. In most situations this emotional response is delayed long enough for associational processes to generate a conceptual response. On the Rorschach test, human movement responses are conceptual responses that appear to involve a dimension beyond that defined by simply delay and association. The person seeing human movement on the Rorschach test is seeing something that is not there. Maybe the unbalanced nature of some of the figures brings the idea of motion to mind. Maybe some combination of elements in the inkblot combine to

stir a memory of prior situations in which real human beings in movement mirrored the position of these figures. Whatever the elements are that result in the perception of movement on a Rorschach test plate, they clearly appear to involve imagination. The figures on the plate do not move.

How and why human movement responses appear to correlate with intelligence is not so clear. Intelligence may be most simply and clearly recognized as the capacity for understanding one's environment in a way which promotes survival and leads to an optimum level of instinctual gratification. This requires the ability to successfully imagine all the possible uses of an object and to predict all the possible consequences of an action. Moreover, it requires the ability to integrate all this information so that the most beneficial use(s) of the object and the most likely consequence(s) of the action are recognized and responded to. From this perspective, it may be reasonably concluded that intelligence is primarily imagination combined with a stable ego and a well integrated sense of self.

Sex Differences In The Human Movement Response

Several researchers have studied sex differences in human movement responses. Subjects from different cultures have been studied and different scoring systems have been used. Many of these researchers have discovered significant differences between males and females in their production of movement responses. When significant differences have been found they have, with almost no exceptions, shown a higher frequency of human movement responses among females.

Richards and Murray (1958), used a highly selective sample of third year undergraduate students in a child psychology course to measure male-female differences on the Rorschach test, using Beck's criteria. Although they were specifically looking for sex differences there is no indication that they controlled for sex effects of the examiner or matched samples of males and females on IQ, or socio-economic status. They used Chi-square and the t-test to test for significance. The t-test requires normally distributed data and may not be valid for this study. The validity of the Chi-square results depends on their manner of choosing a cut-off point and they do not report on this information. Richards and Murray do report significant differences on two variables. Unfortunately they do not say whether these differences were found to be significant by chi-square, the t-test or both. In fact they seemed to be more interested in showing that there were no significant differences between the sexes using traditional determinant scoring - their study was concerned with global scoring - than in determining what these differences might be. Nevertheless, they do report that their female subjects produced significantly more human movement responses than their male subjects and that this difference obtained a .02 level of significance.

Kleinman and Higgins (1966) report on an incidental finding of sex differences found in an investigation of human movement responses. Possibly because it is a report of an incidental finding, the methodology section is scanty. The authors state that 43 male and 49 female undergraduates were used as subjects and no other information on the sample is given. The subjects are shown chromatic

slides of the Rorschach test blots for one minute, during which they write down their response. No inquiry is given. Chi-square is apparently used to test for significance of differences in mean scores but the method of determining the cut is not given. Generalizability of the findings may be severely limited and the validity of their conclusions cannot be determined. Nevertheless women were found to produce significantly more human movement responses.

Ames (1960) found significant sex differences in the longitudinal study of child Rorschach test responses cited in previous sections. Following her subjects from 10 to 16 years old and testing them at each year, Ames found that the girls produced more human movement at every age except 13. For 13 year olds the mean for boys was 0.1 point above that for girls. A simple additive measure of variance appropriate to the Rorschach test was used. No significance tests were reported.

Abel and Metraux (1959) studied sex differences in a Negro community on Montserrat in the British West Indies. They used a moderate sample size, 34 males and 33 females and report that the total number of Rorschach test responses was small (mean 13.45, SD 2.7). Consequently the number of HM responses was small as well: one or two per record at most. Nevertheless, 64 percent of the female subjects reported some human movement on the Rorschach test cards while only 27 percent of the men did so. Chi-square was used to test for significance. This is an appropriate statistic for this data and the probability of a chance occurrence of this nature was less than .01. Chi square was probably a good

choice, given the small number of responses but the importance of a .01 significance level depends upon how they determined their cut and, like most studies, they did not report on this.

Raychaudhuri (1971) found significant sex differences in what appears to be a methodologically sound study designed to examine the relation of creativity and sex to Rorschach test human movement responses. The subjects were normal adults randomly drawn from the Calcutta area and divided into three groups: 1) adults engaged primarily in lower to middle level white collar jobs, 2) a group engaged in creative pursuits such as writing, painting and music and 3) a group composed of "non-masculine males" and "non-feminine females". Each group was comprised of equal numbers of males and females. They were administered the tests individually and the Klopfer (1954) system was used in scoring. Sex effects of the examiner were not taken into account but the examiners (2) were experienced with the Rorschach test and their agreement on to discarded protocols was 92%. He used the Mann-Whitney U test - possibly the single best test of significance for Rorschach test data - and found that the females in group 1 gave more human movement responses than their male counterparts. These findings were significant at the .01 level of significance. He also found that the non-masculine males in group three gave more human movement responses than their masculine counterparts from group 1. This was significant at the .05 level. There was no significant difference in total responsiveness.

Abel and Hsu (1949) found sex differences in their study of personality differences among normal American born Chinese living in America and normal China born Chinese living in America. The tests were administered by three women examiners to reduce examiner effects. The records were scored according to the Klopfer (1954) system. They compared human movement production among four groups: China-born males (CBM), China-born females (CBF), American-born males (ABM) and American-born females (ABF). The following figures were reported: CBM 9.9 percent, CBF 11.4 percent, ABM 11.9 percent, and ABF 13.0 percent. They did not report on significance levels.

Felzer (1955) reported on a study of sex differences in personality.' He tested 100 male and 100 female undergraduates and found non-significant sex differences in HM production. The means were 2.1 for females and 1.8 for males. Although this difference did not reach the .05 level of significance, the direction of the difference was consistent with the studies reported above.

Baughman and Guskin (1958) examined sex differences using Rorschach data that had been gathered for the purpose of studying the effects of stimulus attributes on Rorschach test scores. Twenty-six males and twenty-six females were matched on age and intelligence but there were more college educated males than college educated females in the sample. They did not find a significant difference in HM production and did not report non significant differences. Chi-square was used because of the skewed nature of the data. The method of cut was not specified but the relative insensitivity of chi-square with small sample sizes was noted.

The studies cited above, for the most part, used highly selective samples and their generalizability is limited thereby. On the other hand, the samples vary considerably from study to study while the conclusions remained largely the same. The statistical techniques used were generally those that were appropriate to Rorschach data. There were no studies free of methodological weaknesses but the number of studies using appropriate statistical tests and coming to similar conclusions is impressive. Women do appear to produce more human movement responses on the Rorschach test than men do.

Hypotheses IV and V: Real, Whole-Figure Humans Engaged In Socially Appropriate, Non-Malevolent Movement On The Rorschach Test and Empathic Responsiveness

Two Rorschach test hypotheses believed to be related to empathic capacity are presented in this study. One reason for this is that the response variable in Hypothesis IV is not independent of the response variables in Hypotheses I and III. Consequently, statistical support for Hypotheses I or III would weaken the empathy interpretation of support for Hypothesis IV. Similarly, lack of support for either Hypothesis I or III would reduce the likelihood that Hypothesis IV would receive statistical support. The second reason - and the reason that Hypothesis V is not the only Rorschach test hypothesis believed to be related to empathy that is examined in this study - is that it weights, too heavily, the socially appropriate, non-malevolent components of the response. Since [H] and [HM] are a part of the numerator as well as the denominator their influence is all but eliminated. They become simply

the background upon which social appropriateness and non malevolence are featured. This creates a problem. While an adequate degree of social appropriateness [+] and non malevolence [B or N] appear helpful to the Rorschach test interpretation of empathy these are not as theoretically important as [H] or [HM]. Furthermore, because of the low frequency of both [+] and [B or N], a disproportionate number of the ratio scores in Hypothesis V can be expected to be zero or one. The small number of ratio scores between zero and one are unlikely to vary enough to differentiate two sets of subjects from a sample size of only sixty-two. Because of these considerations Hypothesis IV was included as the more theoretically sound measure of empathy while Hypothesis V was included as the more independent measure.

Hypothesis IV predicts that women produce a greater number of responses involving real, whole-figure humans [H] engaged in socially appropriate [+], non malevolent [B or N] movement or postural tension [HM]; i.e., responses scored: [H, HM, + and B or N]. A greater number of these [H,HM,+,B or N] responses is believed to be a reflection of a greater empathic capacity on the part of women than on the part of men.

Hypothesis V predicts that, for women, a greater proportion of the human movement [HM] responses involving real, whole- figure human content [H], will be socially appropriate [+] and motivationally non-malevolent [B or N], i.e., the ratio of [H,HM,+,B or N] responses to [H,HM] responses will be greater for women than for men. A greater number of these responses in the Rorschach test protocols

of women is also believed to be a reflection of a greater empathic awareness on the part of women than of men.

Women and Empathy

Although greater empathy on the part of women is a common cultural stereotype (Mugg,1982), few studies have actually attempted to measure women's capacity for empathy. Part of the reason for this may be attributed to the difficulty involved in creating an operational definition of empathy. It has been used interchangeably in the literature with such widely disparate concepts as sympathy, insight, identification and projection (Dymond, 1950), understanding, assumed similarity, and the ability to judge (Mueller and Abeles, 1964). Loewenstein (1982) defines it as the capacity for understanding the mental and emotional life of another; Fenichel, (1945) as a kind of partial or temporary identification and Weiner (1966) as the accurate comprehension of the feelings and attitudes of another.

Using a definition of empathy as the ability to "transpose oneself into the thinking, feeling and acting of another," Dymond (1950) found women to be more empathic than men. Furthermore, her profile of the empathic person, whether male or female, as warm and emotional, with a strong interest in others, seems to fit the average female more closely than the average male. Dymond also found that a self concept which closely matched the concept others had of one seemed to be significantly related to empathy, while Strong (1936) found that women were in better agreement about the nature of their femininity than men were about their masculinity.

Indirect evidence of a greater capacity for empathy in women is their greater adaptability. Speaking of the "mixture of components which make possible adaptation on the emotional level" Herman Rorschach (1951, p100) said, "It is probably impossible to draw any sharp line between ability to get into empathic relation and capacity for adaptation". Female infants develop faster than boys (Ames, 1960; Wooley, 1914) suggesting, at the very least, an earlier capacity for adaptation. Women are generally healthier, both mentally and physically, than males (Lewis, 1985; Sherman, 1971) and they tend to live longer (Gadpaille, 1972). Moreover, these findings are not limited to America, or even to post industrial nations. Several cross-cultural studies have found females to be better adjusted than their male counterparts (D'Andrade, 1966). There is other indirect data as well to suggest that women are more empathic: their greater interest in others (Strong, 1936), their greater intimacy with others (Williams, 1977), and their greater emotional dependency on others (Carlson, 1971; Lykes, 1985).

The Measurement of Empathy on the Rorschach

Human movement on the Rorschach has long been thought to reflect the capacity for empathy (Mueller and Abel, 1964). Klopfer, Ainsworth, Klopfer and Holt (1954) interpret the human movement response as indicative of potential empathy. Schachtel, (1966), identifies it as "projected empathy," whereby the subject experiences the kinesthetic sensations that he would have were he in the position of the perceived figure. The essential meaning of the human movement response for Piotrowski (1947) is the subject's attitude toward others. The greater

the number of human movement responses in a subject's record the higher his or her awareness of the complexities of human relationships.

While simply the number of human movement responses signals potential empathy, (Klopfer, Ainsworth, Klopfer and Holt, 1954), several investigators require the presence of other indicators to insure a healthy expression of empathy. Phillips and Smith (1953) understand the human movement response as signaling a sensitivity to interpersonal relations, but not necessarily a mature sensitivity. The maturity of this sensitivity and the nature of its manifestation in the individual subject depends upon other Rorschach determinants. For some (Urist, 1976; Phillips and Smith,1953) the human movement response must be of good form level. In support of this notion, Frankle (1952) found that HM production with good form predicted success in field work for social work students. Referring back to the section on human content, it can be seen that any definition of empathy that subsumes a greater capacity for understanding and communication (Dymond, 1950) must involve real, whole human figures (Klopfer, Ainsworth, Klopfer and Holt, 1954). Human movement involving partial human percepts is indicative of a "regressive fantasy moment" (Beck, 1951) and a potentially faulty assessment of the social milieau (Phillips and Smith, 1953). Human facial expressions may not even be kinesthetic responses (Schachtel, 1966). In addition to Human Movement responses involving real, whole human beings with good form, empathic responses would seem to require an action that is either benevolent or neutral in tone. This may be what Lerner and St. Peter (1984) had in mind when they associated

benevolent percepts on the Rorschach test with a developmentally high level of object relatedness and malevolent percepts with a developmentally low level. Tuber (1989), examining object representation in children, found that when he examined each person's highest, lowest and median score, on the Mutuality of Autonomy Scale (MOA) (Urist, 1977), the girls had more benign percepts at the highest level, more adaptive scores in the middle range and fewer malevolent percepts at the lowest level than did their male counterparts. Assuming validity for the MOA and a relationship between empathy and benevolent versus malevolent attitude, Tuber's girls appear to have a greater empathic expressiveness than his boys.

There are presently no studies of Rorschach test responses comprised of real, whole human percepts engaged in socially appropriate, non malevolent activities.

CHAPTER II

METHODOLOGY

Subjects

The subjects used in this study were drawn at random from a larger sample of normal adults employed by the University of Tennessee at Knoxville. Potential subject's names and addresses were taken from the university payroll records. Each was sent a letter requesting volunteers for a psychological study of normal, healthy and productive adults. Participants were not offered a cash or credit remuneration nor any other tangible incentive for participating. Seven thousand requests were mailed out. Two hundred seventy-five responses were received by return mail. These 275 respondents were contacted by telephone and 175 of them agreed to come in for testing. Of these 175 participants, 150 completed both sessions. Test administration required approximately 6 hours over two sessions.

Since both this study and the larger study from which this sample was drawn are interested in Rorschach data from relatively non-pathological populations the Cornell Index was used as a screening device. The Cornell Index is a short self-report questionnaire which asks subjects to report on psychopathological symptoms. Subjects who score 13 and above, and subjects who endorse special "stop" items, are considered to be significantly more symptomatic than the general population. Subjects who fell into these two categories were eliminated from the data pool used for this study.

The Rorschach test protocols of 62 healthy, productive adults were used in the present study; 31 were male, 31 were female. The mean age of the males was 44.6 with a standard deviation of 11. The mean age for the females was 43.1 with a standard deviation of 10. 21 males and 13 females have post graduate degrees. 1 male and 7 females completed their education with bachelor degrees. 4 males and 10 females have some college but did not finish. 1 male and 1 female ended their education after receiving a high school diploma. Among the males subjects, 21 were married 1 was divorced and 5 were bachelors. Among the females 16 were married, 10 were divorced and 5 had never married. Four of the males provided no demographic data.

The Rorschach Test

Several major scoring systems for the Rorschach test are presently in use. While these systems all share common elements each makes its own unique contribution. Scores in one system do not necessarily equate to scores in another system. It thus becomes important to indicate the way in which the data were obtained both with respect to administration and scoring.

Administration

All of the Rorschach test data used in this study were obtained from tests individually administered and scored according to the criteria set forth in the Burstein-Loucks System (BLS) (Burstein, A.G., & Loucks, S., 1989). The instructions given during administration encourage the subject to give several

responses to each card. Following the subjects free associations to the ten blots, an inquiry is performed. During the Inquiry, each of the subject's verbatim responses is read aloud by the examiner. If the subject does not respond with additional information, the examiner will ask him or her to say more about that. If more information is still not forthcoming the examiner may say "what about the blot brought that to mind?". If this does not elicit more information then the response is accepted as is, and the examiner moves on to the next response. The examiner is encouraged to clarify all salient aspects of the response while being careful not to ask leading questions, especially those encouraging the subject to trace the outline of the percept or name specific variables.

Each Rorschach protocol used in this study was scored three times. The initial scoring was done by the test administrator. The second scoring was done by a graduate student from the Burstein-Loucks scoring laboratory. These two sets of scores were compared, and differences in the two sets of scores were reconciled, by a third person.

Scoring

Five Rorschach test variables are used in the hypotheses examined in this study. These variables and their method of scoring are presented below.

The Human Content Response

There are six categories of Human Content in the Burstein-Loucks System. The subject may see a whole human being [H], an identifiable detail of a human being

[Hd] or, specifically, the head or face of a human being [Hf]. Each of these three variables may be categorized as either real or special case human, giving a total of six Human Content variables. The special case human is scored when the percept is "mythological, distorted, or a cartoon character" (Burstein, A. G., & Loucks, S., 1989). The present study examines the real, whole human content variable [H].

The Color Response

The Color response is one of five "Justifications" in the BLS, the other four being Achromatic Color, Form, Shading and Failure to Justify. Color is scored whenever an appropriate chromatic characteristic of the blot is used to justify the response. Color is always scored independently of form in the Burstein-Loucks scoring system.

The Human Movement Response

Human Movement [HM] is one of six "Imaginal Aspects" scored in the BLS, the others being: Animal Movement, Object Movement, Human Emotion, Texture and Vista. Human Movement is scored any time a percept from any one of the six human content categories is reported as in motion, in interaction with another percept or exhibiting postural tension. Animals reported as engaging in characteristically human activity, interaction or postural tension are also scored Human Movement.

Response Appropriateness

The response appropriateness score judges the social appropriateness of the response with respect to its ability to differentiate between psychotic and non psychotic populations. The response is scored plus [+] or minus [-] and is determined by tables included in the scoring manual for the Burstein-Loucks System.

The Explicit Motivational Valuation

Each Human Movement score in the BLS receives an Explicit Motivational Valuation score. This is obtained by judging the quality of the action as benevolent (B), malevolent (M) or neutral (N). An action is judged benevolent when it is seen by the examiner as positive or life-enhancing, malevolent when it is seen as negative or life-diminishing, and neutral when it contains aspects of neither or both.

The Composite Score

The variable predicted to measure empathy in Hypothesis IV is a composite variable. It is scored each time a subject reports a percept involving socially appropriate [+], non malevolent [B or N] movement or postural tension [HM] by a real, whole human being [H]. That is, a composite response is a response which is scored either [H,HM,+,B] or [H,HM,+,N].

The Ratio Score

The variable predicted to measure empathy in Hypothesis V is a ratio. It is the proportion of real whole human movement responses [H,HM] that are socially

appropriate [+] and non malevolent [B or N]. That is, each subject's ratio score is the number of his or her composite responses [H,HM,+,B or N] divided by the number of his or her real, whole human, movement responses [H,HM]; i.e., [H,HM,+,B or N] responses/[H,HM] responses.

Data Analysis

The Rorschach test presents several problems to the researcher concerned with objective data (Chronbach,L,J, 1949). A potentially perplexing issue for many Rorschach test statisticians is the one of response productivity and its relationship to other Rorschach test variables (Kalter, N., and Marsden, G., 1970). Another is the way in which Rorschach test variables are distributed in the population. The lack of information sufficient to assume a normal distribution, along with the fact that Rorschach test variables often show a skewed distribution (Fiske, D.W., and Baughman, E.E., 1953) limits the statistical techniques which may be applied to the data. Anything more than slight or moderately skewed data can invalidate the t-test (Festinger, L., 1946); and, while false assumptions of normality may not seriously effect the interpretation of simple means, it will generally invalidate second order computations such as the variance and standard deviation (Hotelling, H., and Pabst, M.,G., 1936). A further limitation results from the general consensus, among Rorschach test users, that the underlying variables do not meet the requirements for interval scale data (Chronbach,L,J, 1949). The argument is as follows. Rorschach test variables satisfy the requirements for interval scale data when the number

produced is the only consideration. Thus, Rorschach test data can be considered interval data for the purpose of computing means and standard deviations (assuming a normal distribution) and for comparing number of responses between two or more subjects. For the purpose of interpretation, however, Rorschach test data can only be assumed to be ordinal. This is because a subject producing 2 HM responses, for example, cannot be said to be exhibiting twice as much of anything, except number of HM responses, as the person producing 1 HM response. Similarly, the difference between 1 HM and 2 HM cannot be said to reflect the same variance, in the underlying behavior it is believed to measure, as the difference between 3 HM and 4 HM. Any subject with a score of X on any one of these variables, however, can be safely assumed to have more of what the variable measures than someone with a score of X minus 1. Thus, even in the context of interpretation, Rorschach test variables satisfy the requirements for ordinal scale data. Another problem is that many Rorschach test research studies use relatively small samples. Small sample sizes may invalidate the use of some statistical techniques, such as the t-test, and require the addition of correctional constants in the computation of others such as chi-square, (Chronbach,L.J., 1949).

It can be seen in Table I that the mean R for the male subjects is 20.6 with a standard deviation of 9.5. The mean R for female subjects is 21.6 with a standard deviation of 9.2. Furthermore, the sample distribution of R approached normal. It was therefor determined that the total number of responses by males and females was close enough to make controlling for R unnecessary.

Table I

DESCRIPTIVE STATISTICS

	H	C	HM	COMP	RATIO	R
S Mn	2.5	3.4	4.1	1.8	0.67	21.10
F Mn	3.2	4.0	5.4	2.3	0.67	21.60
M Mn	1.9	2.8	2.9	1.3	0.66	20.61
S Md	2	3	3	1	1.0	19
F Md	2	3	5	2	0.75	18
M Md	1	3	3	1	1.0	19
S SD	2.45	3.42	4.11	1.81	0.44	9.38
F SD	3.04	2.42	3.72	2.08	0.39	9.20
M SD	1.41	1.57	1.64	1.20	0.44	9.51
S DS	0.63	0.59	1.1	1.4	-2.39	0.67
F DS	1.15	1.24	0.29	0.42	-0.59	1.17
M DS	1.9	-0.31	-0.24	0.81	-0.59	0.51
S Mode	1(17)	3(18)	3(15)	1(17)	1(32)	14(7)
F Mode	2(8)	2&3(6)	6(5)	2(8)	1(18)	14(6)
M Mode	1(12)	3(12)	3(11)	1(11)	1(14)	13(19)

F = Female; M = Male; S = Sample; Mn = Mean; Md = Median

SD = Standard Deviation; DS = Degree of Skew

Because a normal distribution cannot be assumed for the variables studied, the distributions specific to this sample were analyzed. The degree of skew was calculated according to the formula given by Hertz (1942) which is

$$\frac{3(\text{Mean} - \text{Median})}{\text{Std. Dev.}}$$

The degree of skew for a normal distribution is zero. Hertz considers a degree of skew below 0.66 to be sufficiently normal to make measures of central tendency meaningful. The results of these calculations are given in Table I along with the mean, median, mode and standard deviation for each variable examined. It can be seen in Table I that the distributions of the human movement, composite and ratio variables are all severely skewed for the sample at large. The H and C variables have a sufficiently low degree of skew for the total sample but are severely skewed for the sex differentiated groups.

Because the Rorschach test data scored in this study is not normally distributed the Mann-Whitney U test, a powerful alternative to the t-test (Thorne, B.M., 1980) was used. The Mann-Whitney rank orders the data, making assumptions about the distribution unnecessary. Chi-square is appropriate with ordinal data and does not require a normal distribution. It does, however, requires large sample sizes to be robust, while the Mann-Whitney does not. The Mann-Whitney statistics were calculated with a correction for ties. Since each hypothesis included a prediction as to the direction of the difference expected, a one-tailed test of significance was deemed appropriate.

CHAPTER III

RESULTS

Hypotheses II and III and IV are supported by the Mann-Whitney analyses of the data; Hypotheses I and V are not. Results of the One-tailed Mann-Whitney analyses are presented in Table II.

TABLE II

MANN-WHITNEY ANALYSIS

	Mean Rank Males	Mean Rank Females	I-Tailed P Values
H	28.02	34.98	0.0605
Color	27.55	35.71	0.0394
HM	25.29	37.71	0.0061
Comp	27.69	35.31	0.0443
Ratio	32.44	30.56	0.3285

Hypothesis I

Table I shows that the mean number of real, whole human content responses [H] is larger for women than for men. The median, mode and standard deviation and are larger for women as well. The difference in mean ranks, shown in Table II, are also greater for women than for men. These differences are all in the

predicted direction but were not found to differentiate male and female scores at a significant level of probability. The hypothesis that women will produce a greater number of real, whole human content responses on the Rorschach test, than men will, is not supported by the data from this study.

Hypothesis II

Table I shows that the mean number of color responses, [C], is larger for females than for males; as is the standard deviation. The medians are equal and the modal score is higher for the males. Table II shows that the mean rank for women is greater than the mean rank for men. This difference is significant at better than a .05 level of probability. The hypothesis that women produce more color responses, than men do, on the Rorschach test is, therefor, supported by the data from this sample. This is consistent with, and supports the notion that women are in more profound contact with their emotions than men are.

Hypothesis III

That the means, medians, modes and standard deviations for the human movement scores are all larger for females than for males can be seen in Table I. The mean rank of 37.71 for women, seen in T

yable II is larger than the mean rank of 27.69 for men. This difference is significant at a level better than .01. Thus the third hypothesis, that women show a greater production of human movement on the Rorschach test, than men do, is strongly

supported by the data. This greater production of HM responses on the part of the female subjects suggests a greater capacity for, and/or use, of imagination and intelligence.

Hypothesis IV

The mean, median, mode and standard deviation for the composite response (H,HM,+,with B or N) all show higher scores for women. The difference in mean ranks between male and female scores is in the predicted direction. This difference is significance at a better than .05 level of significance. Thus the hypothesis that women will produce a greater number of [H,HM,+,with B or N] responses, than men will, is supported by the data from this study. This is supportive of the belief that women possess a greater capacity for empathic responding than men do.

Hypothesis V

The mean and modal ratio scores are the same for the males and females. The median and standard deviation are slightly larger for the males. This is opposite to the direction predicted. The difference in mean ranks, also opposite to the direction predicted, is not significant. The hypothesis that women will produce more [H, HM, +, with B or N] responses than men will is not supported by the data.

CHAPTER IV

DISCUSSION

Overview

This study examines four independent and one dependent hypothesis. These hypotheses are: 1) that women will report more real, whole human content responses [H] on the Rorschach test than men will; 2) that women produce a greater number of Color responses [C] on the Rorschach test than men do; 3) that women will produce more human movement responses [HM] on the Rorschach test than men will; 4) that women will produce a greater number of responses involving real, whole human figures [H] engaged in socially appropriate [+] non malevolent [B or N] movement, or postural tension, [HM], (i.e., more [H,HM,+,B or N] responses), than men will; and 5) that a greater proportion of the [H,HM] responses of women will be socially appropriate and non malevolent than the [H,HM] responses of men. Hypothesis V was generated as a second measure of empathy because Hypothesis IV is not independent of either Hypothesis I or III. Hypotheses II, III, and IV were supported by the data; Hypotheses I and V were not.

Hypothesis I: [H] and Intimacy

The first hypothesis: that women will produce a greater number of real whole human content responses on the Rorschach test because of a greater interest in interpersonal relationships is not supported by the data. This is inconsistent with

previous Rorschach test research showing that women are more interested in other people than men are (Abel and Hsu, 1949; Thorpe and Schwartz, 1966; Ames,1960). It also appears to be inconsistent with a large body of non Rorschach research literature which consistently shows women to be friendlier (Felzer, 1955), more comfortable with intimacy (Williams, 1977), more interested in others (Sherman, 1971; Lewis, 1985; Strong, 1936; Pratt, Golding, Hunter and Sampson, 1988), more nurturing (D'Andrade, 1966) and more dependent on interpersonal relationships for a firm sense of self (Carlson, 1971; Lykes, 1985) than men are. In addition, it appears inconsistent with the notion of a feminine morality based on an ethic of "care" versus a masculine morality based on an ethic of "rights" (Gilligan, 1982).

Subject demographics supply the most likely clue to this lack of agreement with previous research. The subjects are all full time employees of a major university. Every university is designed to create an atmosphere which requires and promotes interpersonal contact as it fosters the discovery and exchange of ideas. Consequently, people associated with a university are likely to show a greater interest in others than that found in the population at large. An interest in others, however, has a healthy limit. If women are more interested in interpersonal contact then men are, they are closer to this limit. In that case, the women in this sample will be more representative of their sex than will the men, who will show a greater interest in others than is true of the male population in general. Thus, while the statistical analysis leaves open the possibility that the females used in this study are

less interested in others than are women in general, the more likely explanation is that the male subjects, because of their connection to the university, are more interested in interpersonal relationships than the average male. Further research is needed to confirm or disconfirm this hypothesis. One way of doing this would be to compare the [H] responses of men in a university setting with the [H] responses of non university males matched for age, intelligence and socio-economic variables. University vs non university women could be compared in the same manner.

There may also be a volunteer effect at work here. It seems likely that people who volunteer for psychological tests are motivated largely by a desire to understand themselves. They may also be more interested in others, especially to the extent that knowledge of others may shed light on their own behavior. Moreover, the desire to do something for free for another person may reflect a greater than average interest in others. If volunteers, as a group, are more interested in others then this could have a mitigating influence on the size of the difference between the men and women in this sample.

A perspective that enjoys some popularity today is that many of the traits associated with women reflect the influence of their inferior status in our culture. This inferior status may influence women toward a greater interest in interpersonal relationships, either because of safety considerations or because it is an area in which they have been allowed the most freedom by the dominant male subculture. To the extent that this is true, the lack of support for Hypothesis I may reflect a

situation in which the females in this sample enjoy a more equal relationship with their male counterparts than is true of the females in the population at large.

Hypothesis II: [C] and Affective Responsiveness

The hypothesis that women will produce a greater number of color responses on the Rorschach is supported by the data. The significantly greater number of color responses produced by the women in this sample is consistent with the belief that they enjoy a more profound contact with their emotions than the males in the sample. These results are not surprising in as much as several researchers, including Herman Rorschach himself, have found females to produce more color responses than males (Rorschach, 1942; Hays, 1952; Felzer, 1955; Ames, 1971; Rice, 1976). Furthermore, both researchers (Frank, 1956) and clinicians (Piotrowski, 1947; Klopfer, 1954; Beck, 1961; Singer and Brown, 1971) are in agreement that color responses on the Rorschach have affective connotations. Non Rorschach research literature is almost overwhelming in its conclusion that women express, feel and are more comfortable with emotions then men (D'Andrade, 1966; Sherman, 1971; Brody, 1985). Some recent research (Moir and Jessel, 1991) attributes this to the larger size of the corpus callosum in women, claiming that it is the channel by which right brain information including emotions is sent to the left brain where it is transformed into language. If true, this would seem to help women become more aware of their emotions. Others point to the fact that women are physically weaker and have, throughout most of recorded history been made

subservient to the male. The argument is that the ability to be aware of emotions, especially in others, may have survival value for women who are able to read the moods of the significant males in the group. As a test of this hypothesis, it might be interesting to examine whether males who are more subservient than the norm are also more emotionally expressive.

Socioeconomic status may also play a role in this hypothesis. At least 21 of the males in this study achieved post graduate degrees compared to only 13 of the females. This may mean a lower average salary for the women. Common knowledge holds that people in lower socio-economic groups traditionally tend to be more emotionally expressive.

Hypothesis III: [HM], Imagination and Intelligence

The third hypothesis, that women will produce a greater number of human movement scores on the Rorschach test, is supported by the data. This finding is consistent with the belief that the average woman possesses a higher level of imagination and intelligence than the average man.

Intelligence, like so many psychological concepts is difficult to define. The Wechsler test categorizes intelligence as verbal and non-verbal. Each of these categories is further subdivided and given a score so that two people may have the same I.Q. score and still be vastly different in their abilities. The measurement of intelligence by breaking it down into component parts is a highly questionable exercise. Ancient wisdom proclaims that the person who breaks something apart in

order to learn about it has left the path of wisdom (Lao Tsu, 1972). Intelligence in this study is defined as the capacity for understanding. Anything more than this is believed by the author to be a combination of intelligence with other factors such as motive, which may direct the attention one way or another, and physical attributes, which may determine such things as energy level, strength and coordination.

Intelligence, as the capacity for understanding, is closely aligned with imagination. It may be only the stability of the organizing ego which separates them. The thin line that is commonly said to separate genius and madness, for example, may rely on the ability to maintain a stable perspective while letting one's imagination run free. This interdependence between intelligence and imagination may be why they are both believed to be reflected in the same Rorschach test variable.

Women were considered intellectually inferior to men for thousands of years (Strong, 1936). Then, with the invention of intelligence tests, women were ceded a slight advantage in general intelligence (Wooley, 1914; Morawski, 1985). This conclusion was not accepted by the majority of men, however, and before long new tests were invented, often, in an attempt to invalidate this conclusion. At present, a belief in the general intellectual inferiority of women is still quite persistent (Sherman, 1971). This is inconsistent with a number of studies concluding that women produce more human movement on the Rorschach test. Most researchers and clinicians alike appear to agree that the number of human movement responses on the Rorschach test varies directly with the intelligence level of the subject.

Consensus, of course, does not make something true. Given that the majority of researchers and clinicians are males, however, and that it is males who appear to have the most trouble accepting a woman's intelligence, the fact that they appear to agree on these two points - that greater HM reflects greater intelligence and that women produce more HM - seems to add weight to the argument. And, like several tests before it, the present study finds that this sample of females produce more HM responses on the Rorschach test than the males do, and so, appear to have a greater imagination and a greater capacity for understanding.

Hypothesis IV: [H,HM,+,B or N] And Empathic Capacity

The fourth hypothesis, that females will produce a greater number of real, whole human figures engaged in socially appropriate, non malevolent movement, or postural tension is supported by the Mann-Whitney U test analysis of the data. This is consistent with the belief that the females in this study experience a higher level of empathic responsiveness than the males.

Human movement is the strongest single indicator of empathic capacity on the Rorschach test. Looking at Table II one can see that the difference in mean ranks for this variable is not only significant but considerable. The presence of an adequate number of color responses is also necessary to a determination of empathic capacity. The significant difference between the female and male subjects on this variable suggests that the women in this study meet this requirement. Empathic capacity would also seem to be related to an interest in others. While the women in

this sample did not show a significantly greater degree of interest in other people than the males in this study did, the data do not indicate a low level of interest on the part of the women. Empathy is a complex and little understood phenomenon. It is, thus, difficult to measure. A meta-analysis by Eisenberg and Lennon (1983) suggests that the nature of male-female differences in empathy vary with how it is measured. Measured as a greater number of [H,HM,+, B/N] responses, i.e., a greater capacity to perceive real, whole human figures of good form quality, engaged in non-malevolent activities on the Rorschach test, the women in this study appear to be clearly more empathic than the men.

The reasons why women may be more empathic than males is as unclear as the concept of empathy itself. One reason, put forth by evolutionary theories, is the obvious advantage that it would give mothers, in both communicating with and understanding the needs, of infant children. Evolutionary theory claims that male-female differences arise because of the different tasks assigned to each sex. Women, throughout recorded history, have been the traditional caregivers. This would make empathic communication a more valuable capacity for them than for the male and for that reason may be more highly developed in the female.

A similar consideration arises from the apparently more subservient nature of women. Empathy is a useful tool in predicting what the more powerful male wishes, thus making the life of a woman who must please him a bit easier. And this same consideration applies to socio-economic status as well. If the women in

this group are significantly lower in socio-economic status, then the difference found in the Hypothesis IV variable may be reflect that lower status.

Hypothesis V: The Ratio [H,HM,+,B or N]/[H,HM] and Empathic Capacity

The fifth hypothesis, that women will produce a greater proportion of [H,HM] responses that are socially appropriate and non malevolent was not supported by the data. Furthermore, the differences were not in the direction predicted. A greater proportion of the men's [H,HM] responses were socially appropriate and non malevolent. This is inconsistent with the notion that women are more empathic than men if, indeed, this variable measures empathy. The reasons for this inconsistency are not clear.

It may be that the women in this sample are not more empathic than the men, although the results of the previous section make this appear unlikely. Another explanation is that there were not enough socially inappropriate or malevolent responses to draw a statistically reliable conclusion. This also seems inadequate as an explanation since fully one-third of the females had [H,HM] responses that were either socially inappropriate, malevolent or both.

It may be that neither social appropriateness nor motivational valuation are accurate predictors of empathy. While these are questions that must await further research, some conjecture may be appropriate. The Social Appropriateness variable measures the level of consensual validation for the subject's perceptions. This may not be a factor in empathy. Empathy, by virtue of its connection to [HM]

responses, appears to be accompanied by a rich imagination. It may even be that the greater the imagination the greater the capacity for empathy. This would reduce the likelihood that the highly empathic person's perceptions achieve a high level of consensual validation. The number of non malevolent vs malevolent percepts may not influence empathy that strongly either. The capacity for empathy would seem to require a high level of object relatedness. A high level of object relatedness would appear to lead to a high ratio of non malevolent to malevolent responses (Lerner and St. Peter, 1984). This is not to say, however, that there is a direct relationship between this ratio and the capacity for empathy. The relationship, if one exists, is more likely to be on the order of a certain minimum requirement. None of the women in this study had the kind of high non malevolent to malevolent response ratio that would suggest a pathological weakening of empathic capacity. The most reasonable explanation for the results of the analysis on the Hypothesis V ratio is that this ratio is not a reliable measure of empathy.

Further research may help to validate or invalidate these conclusions. A sample size in the hundreds could be used to insure a sufficiently large number of socially inappropriate and malevolent responses. Males and females could be compared on the number of socially inappropriate and/or malevolent responses they produce to see if there is a difference between men and women that is independent of empathy. Empathic males and females could be compared to non empathic males and females respectively. Very little research has been done with either the [+,-] Social Appropriateness response or the [B,N,M] Motivational Valuation response.

Considerably more research needs to be done with these variables, not only on their potential role in measuring empathic capacity but in the relationship of these responses to human dynamics in general.

CHAPTER V

CONCLUSION

In the ancient Chinese system of yin and yang, feminine- receptivity is opposed to and complemented by masculine- creativity. Harmony is said to prevail when these two are in balance. They appear out of balance today. Creativity is exalted while receptivity is seen as mere submissiveness and denigrated as weakness. The nature of this shift is so profound as to be almost invisible, and has served as a rationalization for the subjugation of women, possibly since the time of the Old Testament.

The twentieth century attempt to find clear and consistent differences between males and females has been hampered, it is true, by the limitations of the tests used to measure those differences. It is also true that an understanding of male-female differences has suffered from a philosophical perspective that has replaced the concept of complementarity in male-female relationships with the concept of superiority-inferiority.

Our culture has lost its awareness of the basic interconnectedness of all things. This lost awareness is reflected in our common philosophy and in our theologies. It blinds our culture to the basic wrongness of applying the concept of superior-inferior, unilaterally, to human behaviors and capacities. This blindness has resulted, in the notion of superiority as a defining characteristic of the masculine. But what is superior and inferior depends on what one desires. Nothing

is superior outside of the context of what is wished for. Nothing is inferior outside of the context of what one wishes to avoid.

The conclusions drawn in this study were informed by the yin-yang, female-male principles of receptivity-creativity. The results of a Mann-Whitney U test analysis of the data supported three of the Rorschach test score hypotheses consistent with these principles, suggesting that the concept of feminine receptivity is valid today and is manifest as more profound affective contact, greater imagination and intelligence and a greater empathic capacity, on the part of women. To the extent that this conclusion is valid, the notion of masculine superiority is revealed as a cultural illusion without foundation in reality. Males and females, as individuals and as a group, appear to have their own, overlapping, areas of strengths and weakness. To say that one individual or group is superior to another without reference to a specific context, is to reveal an ignorance of both gender differences and of the interconnectedness of all things.

The conclusions based on this data cannot, of course, be safely interpreted as being representative of the population at large. The samples used in this study possess a number of factors which set them apart, not the least of which is educational level and occupational environment. Examiner sex effects were not controlled for and impossible, at this point in time, to ascertain. There is also no way of knowing the effect that the "volunteer mentality" may have on these variables. Nevertheless, there is reason to believe that the average woman may

enjoy the same capacities that the women in this study do. Further research is needed to confirm this.

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VITAE

Alfred Wayne Coursol grew up in Hazel Park, Michigan. He attended Michigan State University where he received a bachelor of sciences degree in engineering mechanics. In his senior year Wayne became interested in psychology and crisis intervention. He worked as a crisis center volunteer at the Listening Ear in East Lansing Michigan from 1971 to 1976. He spent the summer of 1971 as a work-study student at Colorado State Hospital under the auspices of a Western Interstate Commission on Higher Education program. After graduating in December of 1971, he worked as a psychiatric technician at Ypsilanti State Hospital and then as training coordinator for a crisis center in Adrian, Michigan. He became interested in movement therapy in 1974 and in 1976 began studies toward a masters degree in dance movement therapy at Antioch New England in Kenne, New Hampshire, graduating in 1979. While completing an internship at Bronx Psychiatric Center, Bronx State Hospital, New York, Wayne worked as a counselor at a large residential treatment facility in Borum Hill, Brooklyn. Shortly after graduation he moved to San Francisco where he worked as a counselor in residential treatment while building and maintaining a small private practice under the supervision of a licensed psychiatrist. In 1986 he returned to graduate school in clinical psychology at the University of Tennessee at Knoxville and earned his Ph.D. in 1995. He completed an internship at the Humboldt State University Counseling Center in Arcata, California, with a rotation at Sempervirens:

Humboldt County Hospital. Upon graduation Wayne plans to work in the New York area while his wife finishes her art training.