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MMPI and Rorschach Findings of Individuals Approved for Gender Reassignment Surgery

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**MMPI AND RORSCHACH FINDINGS OF INDIVIDUALS APPROVED FOR
GENDER REASSIGNMENT SURGERY**

by

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ABSTRACT

MMPI AND RORSCHACH FINDINGS OF INDIVIDUALS APPROVED FOR GENDER REASSIGNMENT SURGERY

Gregory R. Caron

Virginia Consortium for Professional Psychology, 1995

Chair: Robert P. Archer, Ph.D, EVMS

Both clinical experience and empirical data from psychological tests present a picture of extreme clinical variation among those individuals who request gender reassignment surgery. Results of past empirical studies utilizing the MMPI and the Rorschach Test have tended to be equivocal regarding the level and nature of psychopathology associated with samples of gender dysphorics. These past studies are considered limited particularly in terms of methodological problems related to statistical power. This present study examined the nature and degree of psychopathology in a sample of candidates approved for gender reassignment surgery as reflected on their MMPI-2 clinical scale values and scores on selected Rorschach variables (Exner Comprehensive System). This study compared the MMPI-2 basic scale T-scores from the gender dysphoric sample (56 male-to-female transsexuals and 56 female-to-male transsexuals) to T-scores obtained from a general psychiatric adult inpatient sample ($n = 112$) and T-scores obtained from a normal adult sample ($n = 112$). The comparison groups were matched for gender and age. The Rorschach data ($n = 67$) obtained from the same gender dysphoric sample was compared to frequency data of the Nonpatient Adult Sample, the Character Disorder Sample, and the Inpatient Schizophrenic Sample from the published work of John E. Exner. It was hypothesized that MMPI data for the gender dysphoric group would show a lower level of psychopathology when compared to the inpatient psychiatric group, and a higher level of psychopathology when compared to the normal adult group. For the Rorschach data, it was hypothesized that a greater percentage of the gender dysphoric group would exhibit psychopathology when compared to a nonpatient adult group, and a lower percentage of

the gender dysphoric group would exhibit psychopathology when compared to a character disorder group. In terms of the initial hypotheses, the transsexuals appeared less deviant than expected on the MMPI and more deviant than expected on the Rorschach. On the MMPI-2, the SRS candidates produced a relatively normal mean profile apart from a clinical elevation on scale 2. The Rorschach findings suggested that SRS candidates are different from the normal population and that transsexualism may be associated with various psychological problems which are characteristic of individuals with a personality disorder. The SRS candidates were less likely to manifest psychotic thinking when compared to the Inpatient Schizophrenic sample. The findings from this study were discussed in terms of power coefficients, opposing theoretical formulations of transsexualism, sample selection, self-presentation, the relationship between the MMPI and the Rorschach, clinical case management, and recommendations for future research.

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CHAPTER I
LITERATURE REVIEW
INTRODUCTION

Within the past 30 years an estimated 12,000 sex reassignment surgeries have been performed in the United States (Lothstein & Brown, 1993). A review of outcome studies for sex reassignment studies for sex reassignment surgery (SRS) through 1979 indicated success rates of 68%-86% (Lothstein, 1982). Calling upon the conclusions of outcome studies and expressed satisfaction of individual patients, many gender identity clinics are convinced that gender reassignment is a "worthwhile and beneficial professional intervention" (The Lancet, 1991, p. 603). Despite the positive outcome results and individual case reports, several researchers have advocated a very cautious approach in recommending such procedures (Lothstein, 1982; Roberto, 1983), while others have unequivocally condemned such practices (Meerlo, 1967; Socarides, 1969, 1970; Volkan, 1974; Volkan & Berent, 1976).

The controversy about SRS stems from several factors, one of which is the interpretation given to outcome studies. In his review of outcome studies, Lothstein (1982) regards reports of high success rates as dubious due to lack of long-term follow up studies and the presence of methodological weaknesses in many of the studies. Another factor which has prompted conservative attitudes is the indication of negative results from SRS in several studies. Lothstein and Brown (1993), for example, cite several follow-up studies which anecdotally describe unsuccessful post-operative cases (Gottlieb, 1978; Laub, 1987; Money & Wolff, 1973). Meyer and Reter (1979) concluded that there is no substantive social and psychological differences between patients to whom surgery was provided and those to whom it was not provided.

Compounded with the problematic issues of outcome studies, is the more complex phenomena of extreme clinical variation among individuals (commonly referred to as transsexuals) who request SRS. Transsexualism is considered a complex psychiatric disorder of unknown etiology (Lothstein & Brown, 1993). Individuals who suffer from gender dysphoria and present themselves with the request for gender reassignment are acknowledged by clinicians as a diverse, heterogeneous group representing many clinical variants (Lothstein, 1979a). This diversity can be manifested in terms of severity and chronicity of gender dysphoria, concomitance of Axis I and Axis II disorders, and various expressions of sexual orientation. Transsexual behaviors and wishes are considered to be "the final common pathway" of a number of different disorders and different family and developmental histories (Lothstein & Brown, 1993; Person & Ovesey, 1974a). Thus, developing appropriate classification systems, discovering etiological factors, and examining performance on psychological instruments are essential for making appropriate treatment recommendations for SRS candidates.

Several authors have underscored the need to examine the performance of SRS candidates on objective and projective psychological tests in order to clarify the presence and nature of accompanying psychopathology (Lothstein, 1984; Roberto, 1983). Emphasis on psychosocial factors and psychological techniques is considered essential in treatment management (Lothstein & Brown, 1993). This study will follow the recommendations of past researchers in terms of examining psychological test data obtained from SRS candidates. This study will focus on MMPI and Rorschach data because both instruments are among the most commonly used assessment tools, and used together, they represent potentially non-overlapping sources of information. Appropriate comparison groups representing differing degrees of psychopathology will be utilized. The results of this study will be discussed in terms of implications for the treatment management of SRS candidates.

DESCRIPTION

Transsexualism or Gender Dysphoria?

The term transsexualism, coined in 1949 by Cauldwell, became an official medical-psychological term with the publication of Benjamin's The Transsexual Phenomenon (1966). According to Benjamin (1966), "true transsexuals feel that they belong to the other sex, they want to be and function as members of the opposite sex, not only to appear as such" (p. 13). Transsexuals are unequivocally convinced that they belong to the opposite sex and they express abhorrence for their primary and secondary sex organs (Walinder, 1967). According to Person and Ovesey (1974a), transsexualism is the "wish in biologically normal persons for hormonal and surgical sex reassignment" (P. 4). Consistent with these definitions, Money (1986) describes a transsexual as "genitally an anatomical male or female who expresses with strong conviction that he or she has the mind of the opposite sex, who lives as a member of the opposite sex part-time or full-time, and who seeks to change his or her original sex legally and through hormonal and surgical sex reassignment" (p. 375). Money (1986) also makes the distinction between eonistic transsexualism, in which there is no known discrepancy between assigned sex and the somatic variables of sex, and other transsexualisms in which a discrepancy exists. Overall, these definitions include biological normality, disgust with anatomically and psychosocially assigned sex, and the request for sex reassignment through hormonal and surgical techniques.

Several researchers have preferred to substitute the term "transsexualism" with the term "gender dysphoria syndrome" (Fisk, 1973; Meyer, 1974; Ross, 1986a). According to Meyer (1974), the gender dysphoria syndrome includes "a sense of inappropriateness or incapacity in the anatomically congruent sex role, homoerotic interest, heterosexual inhibition, a sense that improvement would ensure with role reversal, and an active desire for surgical intervention" (p.554). Ross (1986a) emphasizes the need to distinguish between transsexualism and gender dysphoria. He regards transsexualism as a symptom

of the underlying disorder called gender dysphoria. He uses the term transsexualism to refer to the presenting symptom of believing that one is really a member of the opposite biological sex, while gender dysphoria is used to refer to a disturbance in gender identity. Ross distinguishes between primary gender dysphoria which is a constant and severe disturbance in gender identity since childhood, and secondary gender dysphoria which is a more intermittent and moderate disturbance of gender identity and which may be exacerbated by life stressors. Gender dysphoria is also used to describe "a heterogeneous group of individuals who express varying degrees of dissatisfaction with their anatomic gender and the desire to possess the secondary sexual characteristics of the opposite sex" (Brown, 1990, p. 57). According to Brown (1990), psychosocial histories of gender dysphoric patients included consistent cross-dressing behavior, early interest in cross-gender activities, experience of teasing and ostracization by peers, a physically or emotionally distant father, and unsatisfactory intimate relationships. Brown considers transsexualism an extreme form of gender dysphoria. Walker et al. (1985) define the term as "that psychological state whereby a person demonstrates dissatisfaction with their sex of birth and the sex role, as socially defined, which applies to that sex, and who requests hormonal and surgical sex reassignment" (p. 82). For these authors, "gender dysphoria" is used as the primary working diagnosis for those who request SRS. Levine and Lothstein (1981) prefer the term gender dysphoria syndrome. This term "refers to late adolescent or adult biologically normal males or females who display the following descriptive characteristics: 1) A profound identification with the opposite gender; 2) Persistent unwillingness or inability to function socially (i.e., to learn, work, relate) in the anatomically congruent gender role; 3) Disdain, disgust, or disregard for primary and secondary sex characteristics; 4) Refusal to interpret personal sexual attractions as homosexual; 5) Hope, belief or conviction that opposite sex hormones and sex reassignment surgery will improve or solve the dilemma" (p. 88).

What is notable from the review of definitions is that both terms share similar definitions. For example, Money's (1986) definition of transsexualism is almost identical to the definition of gender dysphoria given by Walker et al. (1985). Both terms are used casually by many experts to refer to the same treatment seeking behavior. Stoller (1985) has pointed out the disadvantages of both terms in that they do not provide a formal diagnosis nor clear clinical syndrome. Stoller is very critical of the usage of "gender dysphoria syndrome." He states, "we are dealing not with a syndrome - that is, a complex of signs and symptoms - but rather with a desire (wish, demand) that is embodied in all sorts of different people who suffer all sorts of signs and symptoms" (p. 162). The request for sex reassignment surgery is not a unitary phenomena (Meyer, 1974); within the population who request sex reassignment are individuals with myriad behaviors, attitudes and personalities.

Levine and Lothstein (1981) have listed several objections to the term "transsexualism." First, the term "gender dysphoria syndrome" is more commonly preferred as a diagnosis (MacKenzie, 1978). Second, transsexualism is a patient-provided diagnosis and thus fosters the perception that it is a unitary psychiatric entity. Third, transsexualism is commonly used to refer to three related phenomena: the wish to become a member of the opposite sex; living in the opposite gender role; and post-SRS status. Fourth, since it is not possible to change one's genetic endowments and psychological experience, transsexualism might be more accurately labeled "transgenderism." And fifth, the unitary term transsexualism does not accurately reflect the diversity of patients who require SRS. Meyer (1974) suggests that the term transsexual should only be used to refer to those individuals who have undergone and completed the process of SRS. Some have advocated completely discarding the term transsexual (Kubie & Mackie, 1968).

Since the terms "transsexual," "gender dysphoric," and "SRS applicant or candidate" have been often used interchangeably in the literature (Billingsley, 1984), this study will use whatever term is relied upon by the particular researcher cited. To avoid

the connotation of an adherence to a particular theoretical perspective, the more descriptive term "SRS candidate" will be used when describing this study's methodology.

Prevalence

In a survey of studies from 1953 through 1973 (Roberto, 1983), treatment prevalence has been estimated to be 1:37,000 in biological males and 1:100,000 in biological females. Steiner (1985) notes that the prevalence rate of severe gender dysphoria may be much higher if non-treated cases are reported. In the review by Roberto (1983) the ratio of males to females approximated 3:1 and this ratio continues to be reflected in more recent studies (e.g., Burns, Farrell, & Brown, 1990; Ecklund, Gooren, & Bezemer, 1988). In the Netherlands, for example, Eklund et al. (1988) found a prevalence of 1:18,000 in males and 1:54,000 in females. In contrast, Lothstein (1983) believes actual incidence in females is similar to that observed in males. Pauly (1974a) has estimated ratios of 3:2 and 2:1. The male:female ratio in Sweden has been reported to be almost 1:1 (Walinder, 1968, 1971).

Classification Schemas

Transsexualism was standardized as a diagnosis in 1980 by the American Psychiatric Association (DSM-III, APA, 1980). In the DSM-III-R (1987), Transsexualism and Gender Identity Disorder of Childhood were placed under the category of Disorders Usually First Evident in Infancy, Childhood, or Adolescence. The DSM-III-R also distinguishes between Transsexualism and Gender Identity Disorder of Adolescence or Adulthood, Nontranssexual Type (GIDAANT). This distinction is an attempt to formulate diagnostic criteria to help clinicians in their judgments concerning SRS. The diagnostic criteria for Transsexualism according to DSM-III-R include:

A. Persistent discomfort and sense of inappropriateness about one's assigned sex.

B. Persistent preoccupation for at least two years with getting rid of one's primary and secondary sex characteristics of the other sex.

C. The person has reached puberty.

The DSM-IV subcommittee on Gender Identity Disorders (Bradley et al., 1991) has suggested the merging of the DSM-III-R categories (Transsexualism and Gender Identity Disorder of Childhood) under a distinct diagnostic category of Gender Identity Disorder rather than the category entitled Disorders Usually First Evident in Infancy, Childhood or Adolescence. The subcommittee recommended this change for several reasons. First, patients vary greatly with regard to the severity, constancy and natural history of their gender dysphoria. Second, behavioral precursors of some cases of adult transsexualism are not evident in childhood. Third, there is a perception by many clinicians that there are no distinct boundaries between gender dysphorics who request sex reassignment surgery and those whose cross-gender wishes are of lesser intensity or constancy. And fourth, differences between individuals who proceed towards SRS and those who do not may be more quantitative than qualitative. The subcommittee has also recommended using the following system of subtyping: (i) sexually attracted to males, (ii) sexually attracted to females, (iii) sexually attracted to both, (iv) sexually attracted to neither, and (v) unspecified. The recommendations from the DSM-IV subcommittee have been included in the DSM-IV (see Appendix A for DSM-IV Diagnostic Criteria for Gender Identity Disorder).

Stoller (1985) has proposed a tripartite classification system comprised of Male Primary Transsexualism, Male Secondary Transsexualism, and Female Transsexualism. Male Primary Transsexualism includes anatomical and physiological normality, daily behavior that is indistinguishable from females, the wish to dress and live exclusively as females beginning from earliest childhood, early feminine proclivity confirmed by family and friends, absence of erotic pleasure from female clothing, and adamant denial of homosexuality. Male Secondary Transsexualism evidences cross-gender behavior that does not begin in earliest childhood, and evidences periods of unremarkable masculine behavior. Four subtypes of Secondary Transsexualism are suggested: a progression from

effeminate homosexuality; a progression from transvestism; a progression via a heterosexual lifestyle; and, a progression from an asexual orientation. Female Transsexualism includes biological normality, masculine behaviors from earliest childhood, and erotic attraction to feminine, heterosexual females. Stoller does not divide female transsexuals into primary and secondary.

Levine and Lothstein (1981) have proposed the following diagnostic schema:

MALE GENDER DYSPHORIA SYNDROMES

Primary Gender Dysphoria

Secondary Gender Dysphoria

Transvestic Adaptation

Effeminate Homosexual Adaptation

Ambiguous Gender Identity Adaptation

Mixed Adaptation

FEMALE GENDER DYSPHORIA SYNDROME

Primary Gender Dysphoria

Secondary Gender Dysphoria

Homosexual Adaptation

Gender Ambiguous Adaptation

Mixed Adaptation

For males, Primary Gender Dysphoria includes a lifelong and profound disturbance of core gender identity, childhood cross-dressing, feminine behaviors during preschool and latency, adamant denial of homosexuality, absence of erotic response to female clothing, and lack of attempts at heterosexual activities. Secondary gender dysphoria evolves from failures of other gender identity adaptations due to environmental or psychological stress. Levine and Lothstein regard the development of secondary gender dysphoria as regression caused by unmanageable life problems and/or conflicts. For females, primary gender dysphoria includes childhood masculine proclivity, a high frequency of athletic activity

during latency, poor coping with pubertal body changes, and romantic and sexual involvement with heterosexual females. Similar to males, female secondary gender dysphoria evolves from repression under stress. However, for females, secondary syndromes are much less common than primary syndromes.

Several researchers have proposed classification systems which relate gender dysphoria to other psychopathological entities. For example, The Stanford University Gender Reorientation Program (Fisk, 1974) suggested the following classification system:

GENDER DYSPHORIA SYNDROME

Effeminate Homosexual

Transvestitic

Inadequate-Schizoid Personality

Recovered/Remitted Psychotic

Sociopathic

Meyer (1974) has categorized gender dysphoric patients into the following groups: aging transvestites, younger transvestites exhibiting more fetishistic activities, masochists and sadists, stigmatized homosexuals ill at ease with their homosexuality, polymorphous perverse types, schizoid applicants and eonists.

Several typologies are based on gender orientation and sexual behavior. Bentler (1976) distinguishes between homosexual, asexual, and heterosexual transsexuals. Person and Ovesey (1974a, 1974b) distinguish between primary and secondary transsexuals. Primary Transsexuals are described as asexual, while secondary Transsexualism includes both transvestitic and homosexual types. Buhrich and McConaghy (1978) distinguish between fetishistic and nuclear transsexualism. The fetishistic type involves erotic arousal in association with cross-dressing and tends to be heterosexual in orientation. The nuclear type does not have a history of erotic arousal associated with cross-dressing. Similar to Buhrich and McConaghy, Freund (1985; Freund, Steiner & Chan, 1982) describes a fetishistic type (found in heterosexuals) and a non-fetishistic type (found in homosexuals).

Freund et al. (1982) acknowledge that female to male transsexuals rarely exhibit heterosexual orientation or fetishistic desires and behaviors. Blanchard (1985) has suggested that asexual and bisexual transsexualism are variations of Freund's fetishistic, heterosexual type.

In later work, Blanchard (1989a, 1989b) has hypothesized that non-homosexual gender dysphorias (Heterosexual, Analloerotic, bisexual) constitute a family of autogynephilic disorders which are different from homosexual gender dysphoria. Autogynephilia refers to sexual arousal by the thought or image of being a woman. Syndromes of non-homosexual gender dysphoria are thought to be the result of autogynephilia interacting with additional constitutional or experiential factors. Heterosexual gender dysphorics represent those cases in which the autogynephilic disorder interferes the least with normal erotic attraction to other persons. Bisexual gender dysphorics represent those cases in which the autogynephilic disorder gives rise to some secondary erotic interest in men that coexists with the individuals' basic attraction to women. Analloerotic gender dysphorics represent those cases in which the autogynephilic disorder nullifies or overshadows any erotic attraction to women. Homosexual gender dysphorics are directly aroused by the objective features of the male physique, especially the sight and feel of the male genitalia, and this arousal is not dependent on the mediation of cross-gender fantasy. Cumulative evidence is consistent with the view that the three non-homosexual groups are subtypes of one underlying disorder, and that this disorder is different from that found in homosexual gender dysphorics. The non-homosexual type is characterized by an abnormal tendency to be sexually aroused by the thought of being a woman. Overall, Blanchard regards the major types of non-homosexual gender dysphoria as variant forms of one underlying disorder which he terms "Autogynephilic Gender Dysphoria." Fetishistic cross-dressing and all three types of non-homosexual dysphorics are considered extremely rare in biological females.

GENDER REASSIGNMENT SURGERY

Outcome Studies

Reviewers of outcome studies (Abramowitz, 1986; Lothstein, 1982; Lundstrom, 1981; Lundstrom, Pauly, & Walinder, 1984; Pauly, 1968, 1981) agree that the majority of patients who have undergone SRS report a satisfactory outcome in terms of social-emotional functioning. It has been noted that across these reviews the success and failure rates fall within a similar range (Blanchard & Sheridan, 1990). Pauly (1968, 1981) found that a positive response to SRS was ten times more likely than an unsatisfactory response. Across studies conducted during the 1960's and 1970's, Lothstein (1982) reports success rates from 68% through 86%. Based on data from 368 biological males and 124 biological females, Lundstrom (1981) found an 88% satisfactory rate. Abramowitz (1986) reports an improvement rate of approximately two-thirds. Overall, unsatisfactory results occur in approximately 10% of the SRS patients studied (Lundstrom, Pauly, & Walinder, 1984). A small percentage of these negative outcomes have resulted in suicide, requests for reversal, and psychotic episodes (Abramowitz, 1986; Lundstrom, 1981; Pauly, 1981).

In the majority of studies reviewed, outcome is generally based on clinical interviews and global ratings of patient self-report. A minority of studies have utilized standardized rating scales and objective psychometric instruments (Abramowitz, 1986). None of the studies reviewed included a formal control group (Blanchard & Sheridan, 1990). In a very controversial study (Meyer & Reter, 1979) which utilized an approximation to a control group, the unoperated control group of SRS applicants was shown to improve as much as an operated group in terms of a global rating of psychosocial adjustment. Meyer and Reter (1979) thus concluded that "sex reassignment surgery confers no objective advantage in terms of social rehabilitation" (p. 1015). Blanchard and Sheridan (1990) clearly show that the unoperated group did not constitute an appropriate control group in that it contained individuals who had decided or would decide against SRS as well as individuals who would continue to pursue SRS and eventually satisfy the

criteria for surgery. The outcome measures used by Meyer and Reter have also been highly criticized (Blanchard & Sheridan, 1990; Fleming, Steinman & Bockneck, 1980). Thus, according to Blanchard and Sheridan the findings of the Meyer and Reter study are uninterpretable and the stated conclusions based on these findings are untenable.

Due to numerous methodological problems, the available estimates of success and failure rates from past reviews are regarded as tentative (Blanchard & Sheridan, 1990) and it has been stressed that such estimates should be viewed with caution (Lothstein, 1982). Lothstein (1982) suggests that positive outcome rates may be inflated due to such serious methodological limitations as sampling bias, lack of universally accepted criteria for diagnosis, lack of adequate control groups, lack of long-term follow-up, failure to use standardized clinical instruments, and overreliance on global social-psychological variables from self-report. Blanchard and Sheridan (1990) suggest that failure rates may be seriously inflated rather than the positive outcome rates. Many outcomes classified as poor or unsuccessful have been related to various prognostically unfavorable factors. Such factors include poor or incomplete surgical results (Lundstrom et al., 1984; Ross & Need, 1989), personal and social instability (Lundstrom et al., 1984), older age at request for surgery (Lundstrom et al., 1984; Lindemalm, Korlin & Uddenburg, 1987), approval of secondary transsexuals for SRS (Lothstein, 1982; Lundstrom et al., 1984), nonhomosexual orientation in male gender dysphorics (Lindemalm et al., 1986, 1987), and extreme levels of ambivalence toward surgery (Lindemalm et al., 1987). In a study of male transsexuals, Ross and Need (1989) conclude:

The data suggest that ability to pass as a woman (to oneself and possibly to others) is a critical determinant of postoperative mental state, and that the more telling signs of gender reassignment, the more psychopathology accruing. Current social and family support are also apparently central to postoperative functioning, and it is reasonable to assume that this support also acts to reinforce the patient's self-image as female. ... in situations where the selection for surgery emphasizes absence of psychopathology and selects for prognostically favorable variables, the adequacy of surgery plays a critical role in the postsurgical adjustment of the transsexual (p.152).

More recent studies have attempted to address several of the past methodological limitations by improving on psycho-social measurement, utilizing appropriate control groups, incorporating sufficient time span for follow-up, and using stringent criteria for SRS approval. For example, Mate-Kole, Freschi, and Robin (1990) randomly assigned approved candidates for SRS to an unoperated waiting list group and to an advanced surgery group. Subjects were assessed at the point of acceptance into the SRS program and at a 21 month postoperative follow-up. Based on scores from the Crown-Crisp Experiential Index, the operated group showed significant improvement in psychosocial adjustment compared to the unoperated group. Several recent studies have shown that psychosocial adjustment can improve substantially before surgery as patients work toward the status of the desired sex and that improvement continues after surgery (Blanchard, Steiner & Clemmensen, 1985; Fahrner, Kockott, & Duran, 1987; Kockett & Fahrner, 1987, 1988; Mate-Kole, Freschi & Robin, 1988). For example, Blanchard et al. (1985) utilized the Symptom Checklist 90 - Revised and found significant improvement in mood for both male and female gender dysphorics as they moved toward the status of their desired sex. Kockett and Fahrner (1987, 1988) have measured social and mental adjustment using a scale developed by Hunt and Hampson (1980) and have collected post-surgical data at an average follow-up of 4.6 years. Their patients evidenced significant improvement during the preparatory phase as well as post surgically. Overall, recent studies have shown strong support for the therapeutic effectiveness of SRS.

Accumulated evidence suggests that SRS can be an appropriate and effective treatment of choice for adequately screened gender dysphorics. The immediate problem is not whether SRS is effective treatment per se but whether a particular individual is a suitable candidate for SRS. "The problem is how to identify these patients" (Lothstein, 1982, p. 424). SRS outcome is highly dependent on identifying prognostically favorable and unfavorable factors. Assuming competency in surgical procedures, positive outcomes

will be more likely with thorough initial diagnosis and the determination of an absence of serious social-psychological instability.

Differential Diagnosis

It has been acknowledged that transsexual phenomena may arise from a number of different disorders which need to be distinguished from each other (Lothstein & Brown, 1993). Brown (1990) has provided a useful list for the purpose of the differential diagnosis of gender dysphoria (see Appendix B). He acknowledges that such differential diagnosis is "broad, encompassing both physical and psychiatric considerations" (p. 59). With regard to physical considerations, individuals with disorders caused by hormonal and genetic anomalies usually develop a gender identity and role that is congruent with assigned gender (Money & Ehrhardt, 1972). For the majority of patients who request SRS, organic pathology is not indicated by physical examination or laboratory study (Meyer, Webb & Stuart, 1986).

Bower (1986) places emphasis upon the need to exclude or rule-out schizophrenia, transvestism, homosexuality and temporal lobe epilepsy in order to reach a firm diagnosis of transsexualism. With regard to schizophrenia, one study evidenced a 2.8 percent incidence in male transsexuals and a 5.5 percent incidence in females (Hoenig and Kenna, 1974). Walinder (1967) has recorded a 4.9 incidence for his sample of transsexuals. Bower cites several studies of schizophrenics which show a startling resemblance of genital change symptoms between schizophrenia and the transsexual syndrome, "namely the belief in possessing a gender identity opposite to the one indicated by the genital organs, is held with almost delusional strength" (p. 48). For example, 15 percent of the 150 male schizophrenics were found to exhibit confusion of their sexual identity (Planarsky & Johnston, 1962). In another study, 25 percent of 75 male schizophrenics exhibited delusions of changing sex (Gittleson & Levine, 1966). Similarly, 25 percent of 56 female schizophrenics were found to exhibit delusions of changing sex by Gittleson and Dawson-Butterworth (1967). Transsexualism has also been conceptualized as a form of

schizophrenia. Baastrup (1966), for example, has called transsexualism an attenuated form of schizophrenia.

According to Bower (1986), "the most significant point in the differential diagnosis between transsexualism and transvestism is the relative asexuality, social isolation and intense preoccupation with surgical alteration of genital organs in true transsexuals" (p. 49). The request for surgical sex reassignment from transvestites is seen as a protective device against the aging process, failure of sexual arousal through cross-dressing, and severe non-sexual stress. For females, differential diagnosis for transvestism does not pose a problem in that the fetishistic element is absent in women who dress as men.

Citing past researchers, Bower (1986) suggests that two types of homosexuals may likely seek SRS when faced with stress from various sources. One is the aggressive, histrionic Drag Queen (Person & Ovesey, 1974a, 1974b) who may request SRS following the breakdown in a homosexual relationship. The other is the middle-aged stigmatized homosexual (Meyer, 1974) who consciously rejects homosexuality as socially unacceptable.

Under DSM-III-R, gender dysphoria precludes the diagnosis of Transvestic Fetishism, whereas fetishistic arousal precludes the diagnosis of Transsexualism and GIDAANT. The DSM-IV subcommittee on Gender Identity Disorders (Bradley et al., 1991) has recommended that fetishistic arousal should not be an exclusion criterion of Gender Identity Disorder. According to the subcommittee, "individuals who currently experience erotic arousal in association with cross-dressing as well as gender dysphoria would receive two diagnoses: Gender Identity Disorder and Transvestic Fetishism" (p. 338). Implied in this recommendation is the assumption that transsexualism is a disorder and not a symptom of another disorder.

Based on the work of Blanchard (1985, 1988, 1989a, 1989b) the committee concluded that there are two common routes leading to a gender identity disorder in adolescence and adulthood. "The first group of cases progresses from Gender Identity

Disorder of Childhood and are sexually oriented toward members of their own biological sex; the second appears to progress from Transvestic Fetishism over time to a full-blown gender identity disorder" (Bradley et al., 1991, p. 339).

Criteria for SRS Approval

Receiving a diagnosis of Transsexualism, in isolation, does not necessarily mean that the patient should be accepted for, or would benefit from hormonal or surgical sex reassignment. To aid clinicians in identifying appropriate referrals for hormonal and sex reassignment interventions, several sets of criteria have been proposed.

The minimum acceptable standards of care have been delineated by Walker et al. (1985) and are presented in Appendix C. The DSM-III definition was interpreted not to necessarily exclude from sex reassignment recommendation those individuals who meet both the criteria for transsexualism and also the criteria for transvestism and/or effeminate male homosexuals or masculine female homosexuals. Walker et al. (1985) acknowledge that patients having a psychiatric diagnosis, in addition to a diagnosis of transsexualism, should first be treated by procedures commonly accepted as appropriate for such nontranssexual psychiatric diagnoses.

Lothstein and Brown (1993) have developed "reasonable" criteria for referring gender dysphorics for surgery (see Appendix D). For these researchers, good candidates for hormonal or surgical sex-reassignment are those "who have a life-long history of cross-gender identification, have lived and worked in the cross-gender role for a number of years, are accepted by others in that cross-gender role, and pass well in their new role as males or females" (p. 23).

The most objective measure suggested by Walker et al. (1985) and Lothstein and Brown (1993) for determining if an individual is appropriate for SRS is the "real life test." This test has also been endorsed by Laub and Fisk (1974) and Money and Gaskin (1970). The criteria for successful completion of this test include living fully as a member of the opposite sex, dressing at all times as the opposite sex, adopting new names appropriate for

the opposite sex, presentations of self in all social interactions in the cross-gender role, and obtaining full-time employment or attending school full-time in the cross-gender role (Clemmensen, 1990). The length of time required to live in the cross-gender role ranges from 1 to 5 years depending on the practitioner or clinic. Studies have shown that poor postsurgical outcome and postoperative regrets are related to the failure to complete the real-life test (Bieber, 1972; Eber, 1980; Golosow & Weitzman, 1969; Money & Wolff, 1973; Van Putten & Fawzy, 1976; Walinder, Lundstrom & Thuwe, 1978). It is also assumed that fulfillment of the criteria to maintain full-time employment or school attendance is evidence of psychological stability. It is further assumed that completion of the "real life test" is a good index of the strength of an individual's transsexual wishes.

Conclusions

The classification schemas and differential diagnosis suggestions thus delineated may be of heuristic value in terms of etiological formulation, prognosis, and treatment recommendations. It is assumed that if there are different types of transsexuals or gender dysphorics than there may exist differing etiologies, prognoses and treatments for each type.

In terms of helping clinicians make judgments concerning SRS, present typologies and suggestions for differential diagnosis remain somewhat limited. First, arriving at an adequate definition of terms is highly problematic in that transsexualism may be defined behaviorally and phenomenologically, or inferentially and conceptually (Money & Gaskin, 1970-71). At a phenomenological level, there is considerable agreement as to the general description of transsexualism. It is at the conceptual, theoretical level that the picture becomes extremely blurry. Blanchard (1989b) points out inconsistencies among researchers in use of the primary/secondary distinction. For example, Person and Ovesey (1974a) assert that Stoller's primary transsexualism is secondary, while Stoller (1980) maintains that Person and Ovesey's primary gender dysphoria is secondary. Further, Levine and Lothstein (1981) describe the syndrome of primary gender dysphoria in

females, while Person and Ovesey (1974a) and Stoller (1980) state that primary transsexualism does not exist in females. Second, a clear relationship between subtypes to etiology, prognosis, and treatment management has not been demonstrated. And third, several classification schemas which differentiate types of gender dysphorics according to gender orientation may be making an illusory distinction. According to Langevin (1983) gender identity and erotic preference may be independent factors; erotic preference may have no inherent relationship to gender identity. It is recommended that issues of sexual orientation and sexual behaviors be approached independently of gender identity and role.

It is apparent that differential diagnosis for gender dysphoria is markedly complex and confusing. Boundaries between categories are ambiguous and overlap. For example, division of cross-dressers into transsexuals and transvestites on the basis of the presence or absence of fetishistic behavior may be overly simplistic (Brown, 1990). Hoenig and Kenna (1974) believe that transsexualism is nearly always preceded by transvestism or accompanied by cross-gender fetishism.

Limitations in the classification systems and complexity of differential diagnosis underscore the necessity to employ standardized psychometric instruments in determining appropriateness for SRS. At this time it is not clear whether transsexualism is a discrete category of psychopathology or a manifestation of another underlying condition. The lists of categories for differential diagnosis included a variety of both Axis I and Axis II disorders. Psychological tests are needed in the differential diagnostic process to help identify any underlying psychopathology associated with the specific gender dysphoric syndrome. Psychological tests can also be helpful in determining the severity of the gender identity disturbance. Objective and projective psychological assessment is also needed to complement the "real-life test." It cannot be assumed that successful completion of the real-life test in itself is a sufficient sign of psychological stability.

ETIOLOGY

Biological Factors

Central Nervous System Abnormalities. Hoenig (1985) cites numerous studies (i.e. Hoenig & Kenna, 1979; Kockett & Nusselt, 1976; Walinder, 1967) which evidenced EEG abnormalities in transsexuals. In particular, transsexual symptoms have occurred in individuals with temporal lobe abnormalities. Hoenig points out that the frequency with which abnormalities do occur is considered higher than that attributable to random or chance factors. Given these conditions, the question of a causal relationship between temporal lobe abnormality and transsexualism remains open to further research and speculation.

Chromosomal Abnormalities. Problems of psychosexual differentiation and requests for gender reassignment do not occur with the triple X syndrome (XXX in anatomically normal female) nor with Turner's syndrome (44+XO in which there is an absence of ovaries, short stature, and a body morphology of a female) (Money, 1986). Transsexualism has coexisted with Klinefelter's (XXY) Syndrome and a variety of mosaic patterns (Money, Devore & Norman, 1986; Money & Pollitt, 1964; Rohatgi, Menon, Verma et al., 1987). With Klinefelter's Syndrome an individual is cytogenetically between the sexes but anatomically a male. The most likely explanation for this relationship is "that a general psychologic instability is pathognomonic of Klinefelter's syndrome and that this stigma renders a developing boy with the XXY chromosome constitution unusually vulnerable to an error in psychosexual differentiation" (Money, 1969, p. 95). In terms of family and twin studies, Hoenig (1985) concludes "although the condition arises familiarly too frequently for this to be totally dismissed, the overwhelming majority of cases appear to be quite sporadic and without a positive family incidence of the disorder" (p. 66).

Gonadal And Hormonal Errors. A review of animal studies (Young, Goy, & Phoenix, 1964) strongly supports the notion that gonadal hormones during fetal life have a broad role in the determination of gender dimorphic behavior. There is histological

evidence of masculine/feminine brain organization in the hypothalamus of rats (Dorner, 1976). They have shown that normal male differentiation depends on the presence of adequate amounts of androgens during a critical period of hypothalamic development. Dorner, Rhode, Seidel, Haas, and Schott (1976) conclude that homoeroticism is the behavioral expression of an abnormally sex-differentiated brain, and that such physiological sex-differentiation may be a predisposition for transsexualism. They also conclude that hormonal influences in the human brain during a critical period of fetal development cause masculinization or feminization. Neumann (1970) has shown changes in sexual behavior in male rats following treatment with cyproterone acetate (an antiandrogen) during perinatal life. These changes are offered as an experimental model for transsexual behavior. Studies (Boyer & Aiman, 1982; Kula, Dulko, Pawlikowski et al., 1986) have shown evidence for an abnormal hypothalamic-pituitary function (LH response to gonadotrophin-releasing hormone) in male transsexuals. Transsexualism has also been associated with endocrine abnormalities (5 α -reductase deficiency with subsequent male pseudohermaphroditism) (Peterson, Imperato-McGinley, Gautier et al., 1979). Engel, Pfafflin and Wiedeking (1980) hypothesize that the H-Y antigen is an etiological factor in transsexualism. Hoenig (1985) points out that this hypothesis has not been substantiated in later studies.

In testicular feminization syndrome the androgen responsible for masculinization is without effect in a genetic 44+XY male. This syndrome may lead to the development of a Simulant Female (Money, 1969). In this condition, the external organs differentiate as female. The individual is assigned and reared as a female but lacks a uterus. Such individuals evidence no problems in psychosexual ambiguity and do not request SRS. This syndrome can also lead to Hypospadias in which the differentiation of the penis may remain incomplete. The most usual outcome for such individuals is that psychosexual differentiation takes place in accordance with sex of assignment and rearing. "These

cases, then, are extremely instructive in demonstrating that physique and bodily function are not overriding determinants of gender identity" (Money, 1969, p. 98).

With true hermaphrodites, the individual is cytogenetically 44+XX. True hermaphrodites have both testicular and ovarian tissue represented in the gonads. The external genitalia are typically unfinished. Money (1969) states that "there is not special tendency among true hermaphrodites to grow up to request a reassignment of sex. Most commonly the gender identity differentiates concordantly with the sex of assignment. An occasional case has been recorded of ambisexual morphologic appearance, ambisexual rearing experience and ambisexual identity" (p. 99).

With the adrenogenital syndrome, the adrenal cortex of a genetic 44+XX female fails in synthesizing cortisone and releases a product which has the masculinizing physiologic properties of androgen. The masculinizing influence comes into effect after the ovaries and internal reproductive organs have formed. This produces a girl who exhibits tomboyish behaviors and occasional childhood wishes to be a boy. Yet, there is no indication of true sex reassignment desires later in adulthood. One study (Erhardt, Evers & Money, 1968) has shown that in a sample of women with congenital adrenal hyperplasia there was no predominance of homosexuality or gender dysphoria. Also, in follow-up studies of women exposed to excess androgen in utero, there has been no evidence of gender dysphoria or homosexuality (Money & Matthews, 1982). "All in all, these adrenogenital cases are remarkable in showing the degree to which hormonal (androgenic) function does not control psychosexual differentiation and does not dictate a desire for sex reassignment, even when the androgenic influence persists uncorrected into childhood and or adulthood" (Money, 1969, p. 102).

The disruptions of Gynecomastia in a normal (44+XY) male, male hermaphroditism with uterus and normal penis, hypospadiac male hermaphroditism with uterus differentiated, progestin-induced hermaphroditism, and male hypospadiac

hermaphroditism without uterine differentiation seldom ever lead to gender identity problems or gender identity crises with requests for SRS (Money, 1969).

Conclusions. Overall, etiological significance of biological factors is unclear because most patients with disorders caused by hormonal and genetic anomalies develop a gender identity and role that is congruent with the gender of assignment at or near birth (Money & Ehrhardt, 1972; Simpson & Saenger, 1985). Reviews by Money (1965), Meyer-Bahlburg (1977,1979), and Kupperman (1967) strongly suggest that the hormonal status of transsexuals is not established unequivocally . Although it has been shown that hormones can influence gender behavior, evidence is inconclusive with regard to hormonal influence on gender identity. Several studies on boys and girls (Ehrhardt, Evers & Money, 1968; Ehrhardt, Epstein & Money, 1968; Ehrhardt, Ince & Meyer-Bahlburg, 1981; Ehrhardt & Money, 1967; Yalom, Green & Fisk, 1973) show that gestational androgens in females produce cross-gender behavior, cross-gender eroticism, and increased sex drive while female hormones in males produced cross-gender behavior and reduced sex drive. Yet, in these same studies hormonal influence of gender identity was not indicated. Also, several studies of male and female transsexuals (Money & Brennan, 1968; Money & Primrose, 1968) indicate that sexual arousal patterns are in keeping with the biological originally assigned gender. Ross (1986) states that there is no direct evidence for a genetic explanation of transsexualism; chromosomal abnormalities occur in transsexual populations with about the same frequency as in the general population. For the vast majority of transsexuals, the results of physical examination and laboratory studies are normal with no known organic pathology associated with, or responsible for, the cross-gender symptoms (Meyer, Webb & Stuart, 1986). Because of the lack of physical evidence for a physiological abnormality, the condition of transsexualism is considered to arise primarily from psychological factors. However, Money (1969) asserts that "one necessary qualification to be added to these findings of somatic normalcy is that they are

based on today's tests and methods of measurement. Tomorrow may require a revision" (p. 112).

Several cultural considerations or social mechanisms suggest that biological factors do not necessarily predetermine gender identity and gender-role behaviors. For example, masculinity and femininity as measured in western cultures are not necessarily opposite poles of a single continuum. Masculinity and femininity have been conceptualized as independent, orthogonal factors which coexist in the same individual. According to Bem (1974), the presence of femininity does not imply the reciprocal lack of masculinity. It has been postulated that more transsexuals present in countries where sex roles are more rigid and anti-homosexual attitudes greater than in those countries where these factors are less so (Ross, Walinder, Lundstrom & Thuwe, 1981).

Hoenig (1985) concludes that research has not established that psychological factors are the essential determinants of gender identity. For Hoenig, research findings on a constitutional factor or factors is much more promising. Ross (1986) has concluded that there is no evidence to date that endocrinological factors feature among the causes of gender dysphoria or of homosexuality. Yet, Ross adds, "it is premature to rule out completely either a biological-environmental interaction or the fact that there may be some cases or subgroups of transsexuals with biological involvement" (p. 19). Pauly (1974) states that "whatever the specific etiology of transsexualism the manifestations of the syndrome are psychological" (p. 515). In sum, the possibility for biological antecedents to transsexualism cannot be dismissed. The syndrome is likely to have its origin in the interaction of many factors, an interaction in which psychological factors play a significant role.

Psychological Theories

Psychological theories of transsexualism tend to coalesce around two opposing positions. The first position maintains that transsexualism arises from a non-conflictual process in which gender identity is fixed from a very early age (Baker, 1969; Knorr, Wolf & Meyer, 1968; Money & Gaskin, 1970-71; Pauly, 1968; Stoller, 1968, 1975). Some researchers (Freund, Langevin, Zajac, Steiner & Zajac, 1974) have suggested that transsexuals are psychologically normal and that any concomitant emotional problems are the result of, rather than the cause of gender dysphoria. The second position maintains that transsexualism arises from severe psychological conflict in which gender identity is never clearly established and thus remains ambiguous (Hoenig, Kenna & Youd, 1970; Kubie & Mackie, 1968; Lothstein, 1983; Meerlo, 1967; Meyer, 1974; Person & Ovesey, 1974a, 1974b; Siomopoulos, 1974; Socarides, 1969, 1988; Volkan, 1979).

Research findings from both positions would indicate an association between transsexualism and some degree of psychopathology. Stoller (1968), a solid representative of the first position, regards transsexualism as associated with a greater than usual degree of psychopathology, but not to the degree of severe neurotic or psychotic levels. Researchers, representing the second position and who frame their conclusions in psychodynamic and object relations language (Socarides, 1969, 1988; Volkan, 1979), consider transsexualism a sexual perversion and a variation of borderline personality organization.

Conflict Theories. Based on the concepts of Kernberg (1967), Volkan (1974, 1979) has concluded that the transsexual phenomenon involves a defensive splitting of positive and negative representations. This defensive organization of transsexuals resembles that of individuals with borderline personality organization.

The true transsexual habitually searches for perfection, evidencing a wish to be uncontaminated with aggression and, hence, perfect. As a defense, this search helps maintain primitive splitting and the illusion that as long as there is hope of being 'pure' there is hope that one need not face the primitive anxiety that attends

the possibility that positive and negative self and object representational units will come together (Volkan, 1979, p. 212).

Volkan and Bhatti (1973) present a theoretical formulation on male transsexualism consisting of the following major factors. First, the male transsexual is considered to be partially fixated on symbiotic and early separation-individuation levels. Secondly, a fused identification with the mother occurs which remains in the core of the individual. Thirdly, the individual is unable to progress from the symbiosis with the mother due to a fear of untamed aggression. "Since the penis is the possession that critically distinguishes him from the mother, it becomes the focus and tool of aggression, and must be removed" (p. 271). And fourth, "while the core of undifferentiated self-object representations (fused primary identification) persists, the patient also retains the objects in the external world through a splitting mechanism, and his more differentiated segment goes through the genital development, however unsuccessfully, winding up by charging the penis with value" (p. 271). For Volkan and Bhatti, an individual is "psychotic in the usual sense whenever the core of fused identification with the mother totally dominates relatedness to the world" (p. 271).

For the male transsexual, there is wish to merge with the early mother, accompanied with the dread of doing so. Severe castration anxiety also occurs. This superimposition of oedipal elements on the pathology of early internalized object relations results in self and object identities becoming confused with male and female identities. The penis becomes a symbol of evil and the male transsexual wishes to be free from the contamination of the aggressive penis. The male transsexual ultimately searches for the perfect idealized woman in respect to body parts and self-concept.

The starting point of female transsexualism (Volkan & Masri, 1989) is the presence of a depressed and sexually hungry mother. The father must be absent, physically or psychologically, when the girl is at the oedipal stage. Volkan and Masri (1989) also suggest that another crucial etiological factor is the actual occurrence of

trauma in the child's life that is congruent with, or echoed by, her unconscious fantasy. For the female transsexual, having a penis gives so much power that exhibition of aggression need not occur (Volkan, 1979). The construction of the penis differentiates the female transsexual from the bad mother who is without such an organ. The penis also allows fusion with a partner who represents a good mother.

Volkan's formulations are based on dream interpretation (Volkan & Bhatti, 1973) and on psychoanalytic studies of sex change candidates that ranged from neurotic to psychotic (Volkan, 1979). For Volkan, the procedure of psychoanalytic treatment allows a glimpse of the genesis of the condition through enactment of the transference and countertransference, and allows observation of early fantasy life, defensive resolution of early conflicts, and internalization of object relations.

Person and Ovesey (1974a, 1974b) distinguish between primary and secondary transsexualism. Primary transsexuals evidence the severe gender dysphoria from very early childhood and throughout the course of their development. Primary transsexuals are essentially asexual, and the transsexual impulse is insistent and progressive. Secondary transsexuals are effeminate homosexuals and transvestites who regress under stress and gravitate to transsexualism. The transsexual impulse may be a transient symptom or may harden into the full transsexual syndrome. There is a psychodynamic interrelationship between primary transsexualism, effeminate homosexuality, and transvestism. All three conditions are regarded as originating in unresolved separation anxiety during the separation-individuation phase of childhood development. These conditions originate on a developmental gradient with primary transsexualism occurring in the earliest stages, followed by effeminate homosexuality, and then transvestism.

Person and Ovesey (1974a) see primary transsexuals as resorting to reparative fantasies of symbiotic fusion to allay separation anxiety which ultimately leads to ambiguity of core gender identity. The transsexual acts out his unconscious fantasy through surgery and symbolically becomes his own mother. Rather than desire gender

reassignment, the effeminate homosexual and transvestite resort to part-objects and transitional objects (Person & Ovesey, 1974b). In effeminate homosexuality, the boy fears engulfment and annihilation by the mother and thus transfers his dependency and sexual needs to the male object. The penis is equated with the mother's breast and incorporated orally or anally as a part-object. In the transvestite, female clothes represent the mother as a transitional object and hence confer maternal protection. These defenses, relied upon by the effeminate homosexual and transvestite, usually function reasonably well. However, under severe stress these defenses may fail and the person may regress to a more primitive fantasy of symbiotic fusion with the mother leading to transsexual impulses. Thus, for Person and Ovesey (1974a) transsexualism is not a unitary disorder but "a final common pathway for patients who otherwise differ markedly in family history, developmental history, psychodynamic patterning, personality structure, and clinical course" (p. 4). These authors classify female transsexuals as another form of secondary homosexual transsexualism. There is no female equivalent of primary male transsexualism. Female transsexualism develops only in homosexuals with a masculine gender role identity.

Primary transsexuals (Person & Ovesey, 1974a) are described as extremely gentle self-effacing people, schizoid-obsessive, socially withdrawn, asexual, unassertive, and out of touch with anger. They are not considered psychotic, but exhibit an ambiguous core gender identity, as well as depressive symptoms marked by loneliness, suicidal ideation and suicidal attempts. Their histories include mothers who are excessively distant and insensitive to their child's emotional needs. Primary transsexuals studied by Person and Ovesey evidenced no childhood effeminacy and were not referred to as "sissies." Their childhood was characterized by feelings of abhorrence or discomfort with boyish activities, feelings of estrangement from other children, and experiences of a chronic sense of isolation. According to Person and Ovesey (1974a), primary transsexuals evidence the typical borderline syndrome characterized by "separation anxiety, empty depression, sense

of void, oral dependency, defective self identity, and impaired object relations with absence of trust and fear of intimacy" (p. 19).

Secondary homosexual transsexuals (Person & Ovesey, 1974b) vary along a gradient with passive hysterical personalities at one end and hyperaggressive narcissistic personalities at the other end. They tend to be labile and theatrical. Their history may include a passive, hostile, or emotionally absent father. The mother may be symbiotic, intrusive, or hostile. They exhibit effeminate behavior and cross dressing from early childhood. The transsexual impulse usually appears at the time of a disruption in the homosexual adaptation. The Transvestic transsexual is described as hyper-competitive, hyper-masculine, irritable, depressed, suicidal, and preoccupied with power struggles. Their personalities are organized on an obsessive-paranoid axis with an attenuation of both tender affectivity and sexuality. Their history includes erratic maternal care and includes a verbally abusive or physically violent father. They were never effeminate in childhood and usually exhibited appropriate masculine behaviors with occasional hyper-aggressive and competitive behaviors. Compared to primary and homosexual transsexuals, the core gender identity is more firmly male. The underlying problem is seen as separation anxiety rather than feminization by the mother.

Person and Ovesey (1974a, 1974b) conclude that both primary and secondary transsexuals display manifestations of borderline personality disorder. Separation anxiety is considered the central psychological problem in both transsexualism and borderline conditions. Separation anxiety and fusion fantasies are prominent findings in the clinical material obtained from Person and Ovesey's transsexual samples. The major expressions of the fusion fantasy are 1) the wish to be a girl (boy), 2) cross-dressing, and 3) the request for sex reassignment. In borderline personality disorder the gender identity is normal. Thus, an ambiguous core gender identity is the differential factor between transsexualism and borderline personality disorder. "It is still an open question whether the fusion fantasy in transsexuals in some way, yet unknown, disrupts core gender identity

or whether the ambiguity arises from some other source - psychologic or biologic, or both - and subsequently influences the evolution of the fusion fantasy" (Person & Ovesey, 1974b, p. 189). These conclusions are based on lengthy psychiatric interviews.

Socarides (1969) regards the origins of transsexualism as arising out of the same psychodynamic factors which are present in cases of homosexuals and transvestites. These conditions are the result of deep unconscious conflicts in the earliest years of life engendered by a harmful family environment. The person is unable to pass through the separation-individuation phase, the period during which gender identification is solidified.

Ultimately, for Socarides (1970), transsexualism is considered a sexual perversion. The sexual pervert is unable to pass successfully through symbiotic and separation-individuation phases, thus creating the original anxiety from which the perversion arises. The sexual perversions serve "the repression of a pivotal nuclear complex: the urge to regress to a pre-oedipal fixation in which there is a desire for and dread of merging with the mother in order to reinstate the primitive mother-child unity." (Socarides, 1970, p. 347). The transsexual's wish for gender reassignment is seen as an attempt to promote the enactment of a synthetic and assumed feminine role and to escape homosexuality. The transsexual undergoes castration to vicariously identify with the powerful mother, to neutralize his fear of her, and to consciously enjoy the infantile wish for intercourse with the father. Gender reassignment also allows the person to escape the paranoid-like fear of aggression from hostile stronger men who could cause damage in a homosexual relationships. The psychological motivation behind transsexualism is the wish to maintain optimal distance from the mother to minimize the fear of engulfment. For Socarides, the intrapsychic dynamics and early interpersonal history of female transsexuals is thought to parallel that of male transsexuals.

Socarides (1988) suggests four pathognomic indicators of transsexualism. First, the person evidences primary identification with the all powerful and almighty preoedipal mother. The individual fears he cannot survive without her and concomitantly experiences

sexual gender confusion. Any efforts to separate results in intense anxiety. Second, the general behavior of the individual is markedly pregenital. For example, the behavior is characterized by acting out, poor affect control with occasional outbursts, and predilection for fantasy over reality. Third, the individual exhibits severe disturbance in sense of ego boundaries and body image. And fourth, the individual exhibits oral-aggressive and incorporative tendencies and paranoid anxiety.

Socarides (1988) concludes that gender role inversion is entirely psychological in origin. His unitary theory of perversions (1988) holds that a specific form of perversion may have its origin in oedipal sources, preoedipal fixations, or schizophrenic processes. Thus, Socarides has classified transsexualism as oedipal transsexualism, preoedipal transsexualism, and schizo-transsexualism. He states that many schizo-transsexuals may not appear to have an active and/or covert psychotic process upon initial evaluation, and that it is only after surgery that psychotic symptoms appear in a florid manner. The "well structured perversion" of transsexualism is not considered a separate and distinct clinical entity, but represents a secondary elaboration on the pre-existing disorders of homosexuality and transvestism. The well-structured transsexual's symptom is of preoedipal origin; it does not arise from a schizophrenic process but emerges out of a severe form of feminine homosexuality or transvestism. Oedipal transsexualism is not a true form of the condition but is simply transsexual behavior. Socarides bases his conclusions on psychoanalytic investigations of homosexual cases and clinical observations of children by psychoanalysts.

Lothstein (1983) views female transsexualism as a profound psychological disorder with roots in the preoedipal period and influenced by a family dynamic which communicates distorted gender meanings to the daughter. Each member of Lothstein's sample (1983) evidenced borderline pathology, developmental arrests, and primary disorder of the self-system. At the furthest end of the female transsexual spectrum were those with a profoundly impaired ego mechanism which governs the gender-self

constancy. There was fluidity and oscillation of particle gender-self representations, with poorly consolidated defenses and impaired ego functioning in non-gender areas of their personality. Members in that group were at times overtly psychotic. At the highest level of the spectrum were women with predominantly borderline personality organization who exhibited a variety of low-level character pathology such as schizoid and paranoid disorders and various stages of narcissistic behavior and personality disorders. The majority of the female transsexuals were viewed as having severe borderline personality disorders.

Lothstein (1983) views the female transsexual's request for surgery as a "reparative wish to restore her crumbling female gender-self representation, to prevent a fragmentation of her self-system, and to insure her psychic survival" (p. 237). They attempt to consolidate their gender-self representation and to develop gender-self constancy by employing primitive and rigid defense mechanisms (denial, projection, projective identification, splitting, omnipotence, and devaluation), defenses which are part of the borderline personality organization. It is the pan gender dysphoria which differentiates transsexuals from other borderlines.

Non-conflictual Theory. Stoller (1975) views the gender identity disorder as arising from a non-conflictual process. According to this process, gender in humans can be permanently established in earliest life by psychological forces in opposition to the biological state. Stoller supports this theory by citing studies of hermaphrodites who have been shown to take on the gender of assignment (Money, 1955; Money, Hampson & Hampson, 1956). Through the use of lengthy evaluation interviews, Stoller has developed a list of factors which must coalesce and interact in order for the development of the transsexual condition. For Stoller, the stage is set when a chronically depressed, bisexual woman with severe penis envy and a partially suppressed desire to be a male, marries a distant, passive, incompetent husband. She constantly scorns her inept husband. If they give birth to a beautiful and graceful son, she will tend to hold him close physically and emotionally. Thus, an excessively close and blissful symbiosis develops between the

mother and son. Because the father is not present (physically and emotionally), the son has no male model with which to identify and the father cannot discourage the symbiotic relationship. No oedipal conflict occurs and the little boy experiences no rival for his mother. For the bisexual mother, the male baby satiates her life long hunger for a penis. These mothers do not cripple the development of ego functions in general. None of Stoller's subjects evidenced psychosis or precursors to psychosis. The mother apparently permits unhampered opportunity for separation and individuation, except around the area of attachment to the mother's femaleness and femininity.

Stoller (1975) has also proposed several etiological factors responsible for female transsexualism. The first etiological factor is an infant who does not strike the parents at birth or later as beautiful, graceful, or feminine, and an infant who tends to push away when held. The second etiological factor is a severely depressed, feminine mother who is removed in affect from her child starting at birth. A third etiological factor is a masculine father who is psychologically not present to his wife in her depression and who does not encourage his daughter's femininity.

For Stoller (1975), the gender identity development for the transsexual is the result of imprinting and learning. These processes are considered atraumatic and non-conflictual. Personality structures "most unalterable by life experience or by treatment are those that occur early in life without trauma and subsequent conflict" (p. 33). Thus, the transsexual's gender identity is considered "fixed." The transsexual is not considered delusional because he/she never denies the external reality of his/her genitalia. The transsexual is not repressing masculine or feminine identity because it never existed in the first place.

Consistent with Stoller, Pauly (1968) and Knorr, Wolf and Meyer (1968) maintain that gender identity is established early through the process of imprinting. Once gender identity is established, it is considered impossible to change via psychotherapy. These authors have observed that transsexual patients exhibit intact reality testing and are usually

able to function well in most daily activities. The most likely difficulties experienced by these patients were symptoms of depression.

Money and Gaskin (1970-71) acknowledge that the etiology of transsexualism is essentially unknown. "The most likely etiological explanation is that transsexualism is an extremely tenacious critical-period effect in gender-identity differentiation of a child with a particular but as yet unspecifiable vulnerability" (p. 253). Although Money (1986) acknowledges a biological factor or factors, his is of the opinion that postnatal history is proportionally more important. Gender identity is in large part differentiated postnatally and is subject to social learning.

The greater proportion of gender-identity/role differentiation takes place after birth. It develops on the basis of prenatally programmed sex differences in body morphology, in hormonal function, and in central nervous system function, but is not preordained or preprogrammed in toto by prenatal determinants. Prenatal antecedents lay down a predisposition to which postnatal influences are added. A prenatal defect, skew or bias may be either augmented or counteracted by postnatal influences" (Money, 1986, p. 360).

Money (1986) likens the process of gender identity development to language acquisition. Like language, gender identity is facilitated during a critical period which begins about 18 months of age. The individual codes behavior as masculine and feminine by imitating or copying the behavior of one sex and complimenting the behavior of the other sex. Thus, the result of gender identity acquisition is considered tenacious and largely irreversible.

Conclusions. Many inconsistencies exist between the various findings and theoretical formulations reviewed. For example, Person and Ovesey (1974a) did not find Stoller's (1975) symbiotic, blissful closeness between mother and son. In the family histories of their sample, Person and Ovesey found insensitive and distant mothers. For Stoller, transsexualism derives specifically from the clinging, symbiotic mother through some non-conflictual process similar to imprinting. For Person and Ovesey, any one particular mother-son relational pattern was not a major etiological factor. Rather,

particular patterns were seen as predisposing an individual to separation anxiety and conflict. The fathers in Stoller's, and Person and Ovesey's samples were similar. Another inconsistency involves the level of severity of effeminacy in childhood. Green and Money (1961, 1966) and Stoller (1975) worked with samples which evidenced a marked tendency for the presence of effeminacy in childhood. Person and Ovesey's primary transsexuals (1974a) did not evidence childhood effeminacy. Differences in observations of mother-son interactions and childhood femininity likely reflect the manner in which the researchers distinguish between types of transsexuals.

Inconsistencies have been noted with regard to the notion of a fixed gender identity. Meyer (1974) takes issue with Stoller's position on the notion of a fixed gender identity by citing the findings of Money and Primrose (1968). Money and Primrose found differences between male transsexuals and heterosexual females on several dimensions of maternal feelings, and found differences between female transsexuals and heterosexual males on several dimensions of paternal feelings. Meyer concludes that transsexuals experience an ambivalent and ambiguous gender identity. Eber (1982) also states that the theory of an immutable, non-conflictual cross-gender identity is untenable because there is no established link between extreme femininity in boys and later transsexualism.

The manner in which transsexualism is conceptualized will influence the advisability of SRS and psychotherapeutic techniques (Roberto, 1983). Both the conflictual and non-conflictual psychological theories carry implications regarding preferences for treatment management. Transsexualism may be regarded as a serious psychological illness in which case SRS is always considered inappropriate (Volkan & Berent, 1976). If cross gender identity is conceptualized as arising from a non-conflictual process which is of long standing duration and irreversible, then psychotherapy may be viewed as inconsequential for the condition of transsexualism (Pauly, 1968). Non-conflictual theories supply justification for SRS. If gender identity disorder is conceptualized in terms of borderline conditions and disturbances in self-cohesion, then

psychotherapeutic techniques take on more importance. Lothstein and Brown (1993) advocate an intermediary position regarding surgery and psychotherapy. "The classical view that psychotherapy is all or nothing, that is, it either cures the transsexual of their transsexualism or it is devalued as 'useless' must be abandoned" (p. 27). For Lothstein and Brown (1993), it is critical that psychotherapy be employed throughout the course of the transsexual's evaluation and treatment.

The methodology utilized in the reviewed studies includes brief therapeutic case histories, lengthy psychiatric interviews and long-term psychoanalytic therapy. Such techniques are particularly subject to subjective biases of the researcher. Inconsistencies between individual cases are not well incorporated into the theoretical conceptualizations. Thus, the presence of researcher bias within studies which formulate etiological constructs suggests the need to incorporate more objective psychological measures into such formulations.

The following section will review descriptive and comparative studies which utilized more objective measures to examine an association between gender dysphoria and other psychopathology. The review will limit itself to MMPI and Rorschach studies, two personality assessment instruments commonly relied upon by clinicians (Archer, Maruish, Imhof & Piotrowski, 1991; Lubin, Larsen & Matarazzo, 1984; Piotrowski & Keller, 1989).

ASSESSMENT WITH THE MMPI AND RORSCHACH

MMPI Studies

Studies which utilize the MMPI with gender dysphoric samples fall into three general categories. The first category includes those studies that examine clinical scale elevations without the use of comparison groups. The second category includes those studies which compare gender dysphoric samples to various control groups. And, the third category includes those studies which compare various subtypes of gender dysphoric groups.

Descriptive Studies. Finney, Brandsma, Tondow, and Lemaistre (1975) reached an "intermediate conclusion" with regard the presence and severity of psychopathology within a sample of individuals seeking SRS. Based upon an analysis of MMPI scores by the University of Kentucky Computer Psychodiagnostic System, the majority of subjects (19 males and one female) evidenced hysterical personality features, with a minority showing paranoid or schizoid features. The following measures were significantly different from the normal population mean: the "anxiety or distress measure" was above average in 11 cases and below average in 9 cases; the "hysterical character measure" exceeded the population mean in 19 cases; the "compulsive behavior measure" exceeded the population mean in eight cases; the "strength of conscious" measure was below the mean in 17 cases; scale 4 exceeded the mean of 50 in 19 cases; the "unconscious hostility measure" was above the mean in 18 cases; and, scale 5 showed much higher scores for males with the majority scoring more feminine than the average women. No consistent tendency in test-taking attitude was indicated (Scales L, E, and K). This study does not clearly indicate how the various diagnoses and descriptive terms are derived from particular scale elevations.

Lothstein (1980) found clinical elevations on scales 4 and 5 in a sample of post-operative transsexuals (8 males and 6 females). Lothstein states that the majority of patients exhibited "early developmental, cognitive and affective disturbances, severe

character pathology, severe ego defects, and poor ego boundaries" (p.). He notes the clustering of the following psychiatric diagnosis: Borderline and Narcissistic Personality Disorders with the biological males, and Narcissistic-Paranoid and Passive-Aggressive personalities for the biological females. Lothstein derives these conclusions from a compilation of information obtained from a 59-item questionnaire, clinical interview, and the MMPI. In a study of aging gender dysphoria patients (eight males and two females), Lothstein (1979b) found a mean profile code type of 2584367109. The validity scale mean T-scores were within normal limits (L = 54.4, F = 55.7, K = 59.8) and the mean T-score elevation on scale 2 was 76. Over one-third of the sample's clinical scales had T-scores elevations over 70. These MMPI results suggest that the sample admitted to a wide range of emotional problems. Combining data from the Wechsler Adult Intelligence Scale (WAIS), the Rorschach Test, and the MMPI, Lothstein (1979b) states that the results "supported the clinical picture of marked depressions in a group of males experiencing subtle to overt thought disturbances, nonspecific ego weaknesses, and various defects in attention, concentration, and judgment" (p. 438). Results for the females were similar but less marked. Lothstein's conclusions seem to be the result of a synthesis of test data, clinical interview and substantial clinical experience with the gender dysphoric population. However, as with the Finney et al. (1975) study, it is not clear how Lothstein's conclusions are directly related to the test data.

With a sample of 22 males and five females, Hunt, Carr, and Hampson (1981), found clinical elevations for males on Scale 4 (mean T-score of 73) and Scale 5 (mean T-score of 80). Female subjects exhibited no clinical elevation, yet obtained similar profile configurations to the males on Scale 4 (mean T score of 66) and Scale 5 (mean T-score of 67). This observed difference between males and females was consistent with Lothstein's (1979b) findings.

Steinmeyer (1986) found that the general MMPI configuration from a sample of seven female and 21 male pre-surgical transsexuals was suggestive of characterological,

rather than neurotic or psychotic tendencies. Steinmeyer's interpretation was based on Lachar's (1977) diagnostic criteria for MMPI profiles. However, only eight profiles contained T-scores of 70 or greater. Consistent with past studies, the majority in Steinmeyer's sample produced their highest elevation on Scale 4, with T-scores for this scale ranging between 60 and 69. This range of Scale 4 elevation is interpreted by Steinmeyer as reflecting independence and non-conformity.

A study of 22 males and 10 females (Rosen, 1974) evidenced elevations of all the clinical scales above 50, but Scales 4 and 5 were the only two scales with T-scores greater than 70. Secondary elevations were found on Scales 2 and 8, and to a lesser extent on Scale 9. Males evidenced greater pathology (i.e., greater elevation) compared to females. Males exhibited clinically significant elevations on Scales 4 and 5, with secondary peaks on Scales 8 and 2. Females did not obtain T-scores above 70; their highest score was on Scale 5 followed by Scale 2. Overall, there was considerable variability in individual responses and no single or consistent MMPI pattern was evident. The overall clinical profile of the sample was interpreted as suggesting a general level of unspecified psychological difficulty. Rosen interprets the two point code 4-5/5-4 elevation as suggesting difficulty in social relationships, social adaptation, and interest patterns contrary to genetic sex. Rosen concludes that the distress which accompanies difficulties with gender identity can likely be attributed to the impact of negative social attitudes and conflict associated with cross gender behavior. He states that "the current findings refute those who have considered that the symptoms of difficulty in gender identity or a problem in the expression of gender relevant behavior should prima facie evidence of conspicuous distortion of reality or conspicuous ego defect" (Rosen, 1974, p. 74).

Tsoi, Kok and Long (1977) examined MMPI results from 25 male transsexuals from Singapore and found clinical elevations on Scale 2 (mean T-score of 72), Scale 5 (mean T-score of 80), and Scale 8 (mean T-score of 71). The researchers suggest that the clinical elevations reflect "emotional maladjustment of a depressive nature" which likely

results from the "confused and bizarre life-style" of the gender dysphoric. Tsoi, Kok and Long concur with Rosen (1974) that findings do not support a causal relationship between severe psychopathology and gender dysphoria.

Several researchers using larger samples have concluded that psychopathology along the dimension of character disorders is associated with gender dysphoria. The Melbourne Study (Burnard & Ross, 1986) calculated a mean MMPI profile of 75 successful candidates for SRS. They found a "very significant" peak on Scale 5, a "fairly significant" peak on Scale 4, and a "slightly significant" peak on Scales 3 and 8. They suggest that personality disorders are more likely to associated with transsexualism. Burnard and Ross (1986) do not report the actual mean T-scores obtained in the Melbourne Study. In a study of 53 female transsexuals, Lothstein (1983) calculated a mean MMPI profile of 456-897302/1: E-KL/. Thirty percent of the sample fit into this personality profile.

Comparative Studies. Roback et al. (1976a) compared a group of female SRS candidates (n = 10) with a group of jejunoileal bypass surgery patients (n = 10) and a group of psychiatric outpatients (n = 10). Raw scores were examined using ANOVA and pair-wise mean comparisons via Duncan's multiple range test. Within the group of SRS candidates, T scores for nine clinical scales were elevated above 50 with mean profile peaks on Scale 4 (T = 69) and Scale 5 (T = 73). The validity triad (L, E, and K) evidenced a tendency toward idiosyncratically self-critical responding with mean raw scores of 5.3, 9.3 and 13.5 respectively. Raw scores on Scales 2, 5, and 6 were significantly lower for the SRS candidate group compared to the outpatient psychiatric group. Based upon profile configuration and significant differences between groups, the researchers conclude that the SRS candidate group evidenced "modest" levels of psychiatric impairment; the SRS candidates did not evidence the presence of marked neurotic or psychotic dysfunction. The researchers pointed out that profile peaks on

Scales 4 and 5 are "often obtained by women who experience social difficulties related to their behavioral deviation from sex-role conventions" (p. 431).

Roback et al. (1976b) conducted a similar study with male candidates for SRS and also found a relative absence of psychopathology among the transsexual group in comparison to an outpatient psychiatric group. Raw scores on Scales 2, 5, 6, 7, and 8 were significantly lower for the SRS candidate group. The researchers state that the validity scales counterindicated that the SRS candidates were motivated to underreport psychopathology. The mean raw scores for Scales L, E, and K were 5.5, 4.1, and 17.7 respectively. While both studies by Roback et al. show consistency in their findings that SRS candidates did not exhibit marked psychopathology, the generalizability of their conclusions is limited in that these studies did not utilize normal adults comparison groups.

Tsushima and Wedding (1979) found essentially normal range MMPI results for a male-to-female transsexual group (n = 27), when compared to chronic kidney disease patients (n = 24) and psychophysiological patients (n = 26). Scale 5 was the only clinically elevated scale (mean T-score = 80) within the transsexual group. The researchers suggest that the results may be a function of the desire to qualify for surgery (self-selection and under-report factors). The researchers noted that SRS candidates must have sufficient stability to maintain a full time job in order to finance surgery.

Types of Gender Dysphorics. Fleming et al. (1981) examined four groups of five subjects, each group comprised of pre- and post-surgical males and females. Pre-surgical males obtained the greatest number of scales elevated above T = 60, with Scales 2, 3, 4, 5, 7, 8, and 9 having T-scores of 66, 66, 75, 88, 67, 73, and 67, respectively. For the pre-surgical females, a Scale 4 mean T-score of 61 was interpreted as reflecting the experience of social difficulties due to deviation from conventional sex roles. The post-surgical females evidenced the fewest problems in adjustment on the basis of T-scores. Analysis of variance of raw scores showed that pre-surgical subjects scored significantly higher than post-surgical subjects on Scale 9, as well as in the critical item groupings of somatic

concerns, suicidal thoughts, ideas of reference, persecution and delusions. Differences on Scales **E** and **8** approached significance. This study was consistent with past studies (Finney et al., 1975; Roback et al., 1976a,b; Rosen, 1974) in that all subjects obtained elevations of $T = 60$ or higher on Scale **4**.

Greenburg and Laurence (1981) compared four groups: 1) biological males living consistently as women for at least a number of months ($n = 11$); 2) SRS candidates who have not lived in the female role ($n = 10$); 3) psychiatric inpatients ($n = 32$); and 4) psychiatric outpatients ($n = 20$). According to these researchers, examining data in terms of group means does not permit assessment of how many people in a particular group evidence the modal or mean form of psychopathology. Therefore, they examined the percentage of individuals in each group which obtained significant elevations. Chi-square analysis indicated that the first group had the lowest percentage of elevations on each of nine clinical scales. Group one was less likely than groups two and three to show elevations on Scale **2** or Scale **4**. Group one also showed a lower percentage of clinical elevations on Scale **1** and Scale **3** when compared to group four. The researchers concluded that selectivity of sample plays a predominant role in determining whether male applicants will be looked disturbed on MMPI measures, but underreporting factors may also have influenced these findings.

Langevin, Paitich, and Steiner (1977) compared five groups: 1) male SRS candidates living consistently as females ($n = 25$); 2) Male SRS candidates continuing to live as males ($n = 19$); 3) Non-transsexual homosexual males seeking help at a psychiatric clinic ($n = 20$); 4) homosexuals with no psychiatric history ($n = 19$); and, 5) heterosexual controls ($n = 24$). Multivariate and univariate analysis of variance of raw scores indicated that group two showed the most pathology, followed by group three and then group one. Groups four and five were comparable. Group two evidenced mean elevations above T -score = 70 for Scales **2**, **5**, **7**, and **8**. This profile configuration was interpreted as reflecting psychotic features. Group one exhibited mean T -scores above 70 for Scales **4**

and 5. This profile configuration was interpreted as reflecting character disorders. Scale 5 best differentiated the transsexual groups from the other groups. The researchers conclude that transsexualism is associated with emotional disturbances and antisocial tendencies.

Beatrice (1985) compared four groups: 1) ten heterosexual males; 2) ten transvestites; 3) ten preoperative male transsexuals; and, 4) ten postoperative male transsexuals. The transsexual subjects were obtained from gender identity clinics associated with medical schools of major universities. The preoperative subjects had met the minimum criteria leading to the decision that sex reassignment was warranted. These criteria included a) being known to the clinic for at least one year; b) having cross-dressed successfully full-time without arrest for at least one year; c) having attended at least ten group therapy sessions; d) being emotionally self-supporting; and e) having adequate finances to pay for surgical procedures. The MMPI clinical scales were analyzed via one-way analysis of variance and protected t-tests. The preoperative transsexuals scored higher on Scale 8 compared to the heterosexual group. The postoperative transsexuals scored higher on scale 6 and scale 8 when compared to the transvestites and heterosexuals. Six of the preoperative transsexuals obtained a two-point code type of 49/94, a code type associated with antisocial personality, emotionally unstable personality, and the possibility of manic-depressive psychosis. Seven of the postoperative transsexuals obtained a two-point code type of 48/84, a code type associated with paranoid schizophrenia, schizoid personality, or paranoid personality. Beatrice (1985) concludes that the findings "offer strong presumptive evidence of significant clinical dysfunction in the transsexual group" (p. 362).

Billingsley (1984) compared primary gender dysphorics (13 males and 8 females) to secondary gender dysphorics (20 males and five females). The study failed to show any differences between the two groups in frequency or level of psychopathology. Seventy-four percent of the total sample showed at least one MMPI scale (excluding Scale 5)

elevated greater than a T-score of 70. Significant gender differences also occurred, with males tending to show higher mean MMPI scale scores than females. Males also evidenced greater elevations on Scales 2 and 7, both in terms of the percentage of males elevating the scale greater than a T-score of 70 and in terms of the relative group mean. Billingsley concludes that some level of psychopathology is clearly associated with gender dysphoria.

Leavitt and Berger (1990) compared mean MMPI T-scores utilizing one-way ANOVA for three groups of male transsexuals: 1) the Inactive group which was comprised of 36 subjects who abstained from sexual activity; 2) the Avoidant group which was comprised of 15 subjects who were sexually active but avoided using their penis; and 3) the Pleasure group was comprised of 30 subjects who were sexually active and derived pleasure from their penis. All three groups had mean T-scores in excess of 80 on Scale 5. Both the Inactive and Pleasure groups obtained significantly higher T-scores compared to the Avoidant group on Scales E, 1, 4, 6, and 8. The Inactive group obtained mean T-scores of 58, 56, 68, 63, 68, respectively on the latter scales, while the pleasure group obtained mean T-scores of 60, 58, 70, 63 and 70, respectively. The highest elevations for the Avoidant group were on Scale 2 (mean T-score = 65) and Scale 4 (mean T-score = 61). The researchers suggested that the Avoidant group appeared psychologically healthy, and that the Inactive and Pleasure groups showed significant psychological impairment. A limitation of this study is that the value of selecting groups based on erotic preference and behavior has not been established. Further, it has been postulated that gender identity and erotic preference are independent factors that have little or no inherent relationship to one another (Langevin, 1993).

Conclusions and Critique. From the review of the above MMPI studies, several conclusions are clear. First, many gender dysphorics produce clinical range elevations on MMPI scales. Second, the degree of psychopathology and psychological distress present in gender dysphoric samples ranges from mild or moderate (i.e., Rosen, 1974; Tsushima &

Wedding, 1976; Tsoi et al., 1977) to severe (i.e., Beatrice, 1985; Greenburg & Laurence, 1981; Langevin et al., 1977) depending upon each researcher's interpretation of the scale configuration, the types of comparison groups utilized, and the criteria used to determine transsexual sample selection. Third, higher elevations of Scales 4 and 5, relative to the other clinical scales, are consistently found across studies (Lothstein, 1984). Transsexuals clearly evidence association with the gender identity opposite their biological sex. And fourth, biological males tend to evidence higher overall elevations compared to biological females.

The equivocal nature of the conclusions derived from past studies arises from a number of methodological weaknesses. First, many of the studies utilize small samples. Studies which have used larger samples (i.e., Burnard & Ross, 1986; Leavitt & Berger, 1990; Lothstein, 1983) are descriptive in design and do not utilize statistical comparisons. Small sample size may adversely affect statistical power (Cohen, 1962, 1990). Problems related to statistical power will be explicated in a latter section. Second, several studies may suffer from subjective biases in interpretation in that similar scale elevations have been interpreted differently across researchers. For example, T-scores in the high sixties have been equated with character disorders (Steinmeyer, 1986), unspecified psychological difficulty (Rosen, 1974), a modest level of psychiatric impairment (Roback, 1976a), strikingly normal results (Tsoi, Kok & Long, 1977), and significant psychological impairment (Leavitt & Berger, 1990). Also, elevations on scale 4 have been interpreted to reflect character disorders (Burnard & Ross, 1986; Langevin et al., 1977; Lothstein, 1983), difficulties in social relationships and adaptation (Flemming et al., 1981; Roback, 1976a; Rosen, 1974), and independency and nonconformity (Steinmeyer, 1986). Third, three comparative studies (Roback, 1976a,b; Tsushima & Wedding, 1979) which evidenced a lesser degree of psychopathology for gender dysphorics, failed to use a normal control group in order to represent the other extreme of the continuum. Fourth, most studies that utilized a normal control group (Greenburg & Laurence, 1981;

Langevin et al., 1977) did not adequately match for variables such as age, level of education, or intelligence. Fifth, statistical analysis of MMPI data has not been consistent across studies. Statistical analyses have involved examination of MMPI raw scores, T-scores, and the percentage of individuals producing clinical range elevations. Further, many studies do not state whether they are using T-scores based on biological sex or desired sex. Finally, the conclusions reached by those studies (Greenburg & Laurence, 1981; Langevin et al., 1977) which compared SRS candidates living in the role of the desired sex to SRS candidates living in the role of their biological sex must be viewed with some skepticism. The higher level of distress evidenced by individuals continuing to live in the role of their biological sex may not necessarily reflect a more chronic personality trait as suggested by these researchers. Rather, the MMPI results from these groups may reflect differing levels of distress related to the chronological point at which the individual finds him/herself in the process toward surgery.

Rorschach Studies

Only two studies of transsexuals have utilized the Rorschach and comparison groups (Fleming, Jones & Simons, 1982; Murray, 1985). Most of the studies utilizing the Rorschach are descriptive in nature, and in many cases, the Rorschach is incorporated as part of a battery of psychological tests.

Comparative Studies. Fleming, Jones and Simons (1982) compared pre- and post-surgical male (n = 10) and female (n = 10) transsexuals. They used elements of both the Klopfer and Beck methods in scoring their Rorschach protocols. Male transsexuals produced more responses (R), and the authors noted that in the general population females tend to be more productive on the Rorschach than males. Thus, the male transsexuals scored in the direction of the desired sex rather than their biological sex. The pre-surgical female transsexuals produced more whole responses (W), which was interpreted as an index of aspiration. The quality of the whole responses evidenced a tendency to strive beyond capacity. Differences between the pre- and post-surgical groups

occurred. Animal movement (FM) increased from intake to retake. The authors state this is consistent with "a deflation of fantasy solutions to the problem of gender dysphoria with a concomitant frustration of impulses" (p. 411). FM was interpreted as reflecting the capacity for partial awareness of impulses, conflict and tension with insight and good adjustment potential, and a regressive tendency. There was also an increase in inanimate movement (m) from intake to retake. This difference was interpreted as reflecting a weakening of the belief in surgery as a panacea and a concomitant increase in the realization of one's vulnerability to the pressures of external reality.

In describing their total sample, Fleming et al. (1982) found normal human movement (M) responses and normal form quality (F+) percentage values. The authors suggested that character problems may be indicated by lower M responses. The researchers also noted that in terms of M responses their sample appeared more normal than Exner's (1976) character disorder group. Compared to general population norms, the sample obtained more W responses with poor form quality and higher synthesized W responses. This suggests a great range of high and low functioning and the presence of loose and exotic thoughts and behaviors. The rate of popular responses was lower than that found for the normal population. It was suggested that this difference reflects less conventional attitudes on the part of the transsexuals. Whole human (H), human detail (Hd), and anatomy (An) content responses did not differ from the general norms. Overall, the study by Fleming et al. (1982) showed few differences from the norms of the general population.

Murray (1985) compared three groups: 1) a male college student control group (n = 25); 2) a male transsexual group (n = 25); and, 3) an inpatient male borderline group determined by Kernbergian criteria (n = 18). Murray employed the following scoring systems: Holt's System for scoring primary process manifestations (Holt, 1970); Urist's (1977) Mutuality of Autonomy Scale (MAS); Exner's (1978) Special Scorings; and a masculine-feminine semantic differential scale developed by Murray. Differences were

found between the transsexual group and the normal group. Aggressive responses were more intense for the transsexual group; the Urist Scale and extended form quality (X+%) responses were lower for the transsexual group. The transsexual group also exhibited a higher number of special scores especially deviant verbalizations (DV). No differences were obtained on the above mentioned variables between the borderline and transsexual groups. Thus, the transsexual males and borderline males were differentiated from normal males on the basis of more severe psychopathology displayed on the Rorschach. This pathology included more intense aggression, a lower level object relations, poorer form level and more frequent special scores. The researcher concluded that male transsexuals may have a borderline level of personality organization.

Batteries. In the previously mentioned study by Leavitt and Berger (1993) which utilized the Beck method, the F% and number of sex responses were different for the Pleasure and Inactive groups compared to the Avoidant group. In Lothstein's study (1979) of aging transsexuals, the mean form quality (F+%) was 68%. This was interpreted as indicating the presence of thought disorder and poor reality testing. Eight out of the ten subjects evidenced nonspecific ego weaknesses, low thresholds for frustration and anxiety, and inability to delay impulses. The Melbourne Study (Burnard & Ross, 1986) found three core groups of transsexuals (n = 75): a) hysterical; b) narcissistic; and c) a most severely disturbed group showing lack of ego strength and psychotic traits. In the Melbourne Study, narcissistic transsexuals evidenced preoccupation with clothing (Cg), jewelry, external appearance, lack of texture (T), low anxiety tolerance, strong sensual impulses, and poor controls.

Lothstein (1983) found a bimodal clinical picture for his sample of 53 female transsexuals. Generally they appeared stable on objective tests (MMPI) and in clinical interviews. Projective tests (Rorschach, TAT) evidenced subtle but nonintrusive thought disorder, capacity to regress under stress, and mild borderline personality disorder. The complete batteries evidenced a tendency toward dissimulation, paranoid traits, poor reality

testing, impulsive behavior, narcissism, and depressive attitudes. Lothstein has reported in detail on several individuals' test results. In one such case, the individual obtained 15 responses, a high number of movement responses (interpreted as reflecting tension, anxiety, conflict), many multiple determinants (interpreted as reflecting inner turmoil and anguish). Overall, the Rorschach record indicated thinking that was subject to intrusion and distortion and appeared confused and perplexed. Lothstein labeled this record as reflecting a subtle, but nonintrusive, thought disorder. The record also indicated affectively laden impulses. These problems in thinking and affect were not evident in clinical interview. The individual was also overwhelmed by color and exhibited difficulty in unifying images. Finally, the individual also exhibited inner conflict, a split between male and female elements which was ego dystonic, underlying depression, use of primitive defenses (denial, splitting, omnipotence, projection, projective identification), feelings of vulnerability and weakness, unconventionality and a rich fantasy life. MMPI findings for this individual appeared normal, but the response record was guarded. One year after surgery, this same individual's Rorschach indicated a breakdown in their control system. The person obtained 23 responses, and 57% on the F+%. The record indicated that the person was experiencing the self as strange and defective. There was also evidence of a disturbed body image, impaired self-image, surfacing depression, increased potential for acting out, and blurred ego boundaries. Responses included human figures as silhouettes or poorly formed, transparent boundaries, and reflections. There was evidence of proness to primary process thinking, and surfacing aggressive and sexual impulses. One limitation concerning Lothstein's description of female transsexualism is that his interpretive statements tend to be vague and not directly linked to test data. Lothstein does not report which Rorschach system was utilized for scoring or interpretation. He does state that his formulations are derived from a synthesis of the group data approach with the single case approach.

Conclusions and Critique. In general, Rorschach data tend to reflect a greater degree of psychopathology than MMPI data. It has been speculated that individuals with borderline traits may appear normal on objective tests while a pathological picture may emerge on projective measures (Holt, 1968), but this conclusion has been vigorously questioned (Wideger, 1982). This bimodal picture may also be attributed to other factors. First, differences in the results may be attributed to the unique characteristics of each test. Second, researcher bias may more easily contaminate the Rorschach results due to inconsistencies in scoring and interpretive methods. For example, in several studies (Burnard & Ross, 1986; Lothstein, 1979, 1983) the description of transsexual samples based on Rorschach results is often vague and not clearly tied to test data or findings.

The two comparative studies (Fleming et al., 1982; Murray, 1985) suffer from several significant methodological problems which may explain the contradictory conclusions. First, the studies failed to utilize appropriately matched control groups. Murray's normal group was significantly younger than the transsexual and borderline groups. Flemming et al. relied on norms from the general population. Second, both studies used small samples. It is possible that Murray did not detect a significant difference between his transsexual group and his borderline group due to lack of statistical power (Cohen, 1962, 1990). Findings based on small samples are prone to Type II error.

Finally, an important factor which may negatively impact most of the past Rorschach studies with transsexuals is that of measurement reliability. Various scoring and interpretive methods have been used across studies, and most studies fail to report interrater reliabilities. The Foundation of Rorschach Research (Exner, 1993) has found that each non-Comprehensive Rorschach system included some scores, scoring criteria and interpretive postulates which did not have empirical support. This suggests that further research should utilize the most reliable scoring and interpretive system available.

Implications of MMPI and Rorschach Studies

The cumulative findings from MMPI and from Rorschach studies evidence a wide range of psychopathology associated with the phenomenon of transsexualism. This is consistent with the numerous psychological theories of the gender dysphoria syndrome, as well as with studies utilizing other types of personality instruments (Brems, Adams & Skillman, 1993; Derogatis, Meyer & Vazques, 1978; Lothstein, 1984; Pauly, 1974b). Yet, the number of methodological weaknesses noted in past studies suggests that the question of the nature and severity of psychopathology within the gender dysphoric population has not been adequately addressed from an empirical frame of reference. From the review and critique of MMPI and Rorschach studies, several issues have emerged which could be addressed in future research.

First, although not empirically demonstrated, several authors have suggested formulations regarding the nature of the association between psychopathology and gender identity confusion. Some researchers (Freund, Langevin, Steiner & Zajac, 1974) have suggested that transsexuals are psychologically normal and that any concomitant emotional problems are the result of, rather than the cause of, gender dysphoria. Several researches have suggested that most prevalent form of psychopathology is depression (Derogatis et al., 1978; Pauly, 1974) and that this depression may be a response to living with the burden of a gender identity disorder. Rosen (1974) and Roback (1976a) argued that the distress which accompanies difficulties with gender identity can likely be attributed to the impact of negative social attitudes and conflict associated with cross gender behavior. On the other hand, Walker (1987) maintains that majority of transsexuals suffer from severe character pathology. The linking of severe character pathology with the desire for sex-reassignment indirectly suggests that gender dysphoria is the result of another underlying pathological condition. Based on psychological assessment and clinical interviews, Lothstein (1983) concludes that female transsexualism is the outcome of many different converging paths. Their family life is disorganized, chaotic, and overstimulated,

and their childhood is characterized with themes of abandonment, loss, separation, and depression. They exhibit a chronic life history of considerable emotional turmoil, severe personality disturbance, and chronic adjustment problems. To date, it has not been determined whether gender dysphoria is a discrete entity, or symptomatic of other underlying conditions. In order to adequately address this question of cause and effect, future research must employ longitudinal designs incorporating multiple regression and path analysis statistical techniques.

Second, gender differences involving degree of opposite gender identification and degree of accompanying psychopathology have been indicated by MMPI results (i.e., Billingsley, 1984; Fleming et al., 1981; Lothstein, 1979, 1984; Hunt, Carr & Hampson, 1981; Rosen, 1974; Steinmeyer, 1986). Males tend to score significantly higher than females on Scale 5. Pauly (1974) has noted that on masculinity/femininity tests, males tend to score above the average for normal women, while females tend to score in the average range for normal males. Thus, males tend to be more stereotyped and extreme in their perceptions and portrayals of femininity. In terms of degree of accompanying psychopathology, males evidence more dramatic psychopathology than females. This picture is consistent with the opinions of several clinicians. Females exhibit less difficulty with social integration (Kocket & Fahrner, 1988), and males are described as more asthenic, hysteroid, and psychoinfantile (Walinder, 1967). Pauly (1974b) is of the opinion that females "seem better adjusted, freer of paranoid trends, and more realistic in their appraisal of what is possible for them" (p. 510). Yet, the conclusion that female transsexuals are better adjusted than male transsexuals must be held very tentatively. Lothstein (1984) points out that two opposing views of female transsexualism exist depending upon the methodology used in the study. Also, based on clinical interview and both objective and projective instruments, Lothstein (1983) is of the opinion that females exhibit similar degrees and types of psychopathology. Because both the MMPI and Rorschach studies tend to be heavily skewed in the direction of focusing exclusively on

male subjects, future research should incorporate an examination of both male and female subjects in order to shed more light on the issue of gender differences.

Third, several methodological problems were consistently noted across both MMPI and Rorschach studies. These problems are related to the utilization of appropriate and well matched comparison groups and to factors which negatively impact on statistical power. Both issues will be further discussed in the following sections.

Test Power or Sensitivity

The basis for statistical inference in the behavioral sciences has been Fisher's (1935) theory of null hypothesis testing. In Fisher's model exclusive attention is given to statistical significance and Type I error (rejection of the null hypothesis when it is true). Several authors (Cohen, 1962, 1990; Rossi, 1990; Sedlmeier & Gigerenzer, 1989) have been highly critical of the over-reliance on Fischer's model in behavioral research. For example, Fisher's scheme does not address issues related to the alternative hypothesis. Also, the alpha probability does not give information concerning the probability that the null hypothesis is true. Researchers have been urged to incorporate elements of the Neyman-Pearson theory (Neyman & Pearson, 1928a, 1928b) into their statistical decision making processes. The Neyman-Pearson theory places emphasis on statistical power and type II error (failure to reject the null when the alternative is true) and thus addresses issues concerning the alternative hypothesis more directly.

According to the Nyeman-Pearson theory (Sedlmeier & Gigerenzer, 1989), statistical power refers to the probability of acceptance of H_1 if H_1 is true (1-beta). In other words, "the power of a study is the probability of detecting a difference when one is really there" (Acklin, McDowell & Orndoff, 1992, p. 369). Knowledge of power helps to indicate the likelihood of obtaining a statistically significant result and also helps to facilitate interpretation of null results. Cohen (1988) has defined power as a function of three major factors: 1) effect size to be detected; 2) level of significance selected by the researcher; and, 3) number of observations used in the study. Effect size refers to the

discrepancy between H_0 and H_1 . Power will increase with an increase in effect size if other factors are kept constant. Level of significance (α) refers to the long-run frequency of rejecting H_0 if H_0 is true. If other factors are kept constant, power will decrease with a decrease in α (e.g., .05 being adjusted to .01). An increase in the number of observations will increase power because the standard deviation of the sampling distributions become smaller resulting in less overlap between H_0 and H_1 . Power is also affected by violations of the assumptions of statistical models. These assumptions include independence, equality of variance, measurement reliability, and the normality of the distributions.

Findings across power surveys of existing psychological literature (Rossi, 1990) indicate that power to detect small and medium differences is typically quite low. For example, across 221 studies, Rossi (1990) found the mean power to detect small, medium, and large effects to be .17, .57, and .83, respectively. Comparing his findings to Cohen's (1962) work, Rossi concluded that within psychological research "power to detect small effects continues to be poor, power to detect medium effects continues to be marginal, and power to detect large effects continues to be adequate" (p. 650). The combination of small effect size and low power will contribute to proliferation of Type I error, an increase in Type II error, failure in replicating studies, and difficulty in interpreting negative findings. The combination of a medium effect size with average (i.e., marginal) power around .50 will result in a mixed pattern of significant and non-significant findings across studies. Cohen (1988) has suggested .80 as a "desirable minimum" for statistical power. This adequate level (i.e., .80 and above) permits the rejection of the alternative hypothesis with an acceptable beta error probability.

The level of statistical power within both MMPI and Rorschach research on transsexuals is adversely affected by several factors. First, it is highly unlikely that large effect sizes exist within the research domain. According to Rossi (1990), medium effect sizes approximating Cohen's (1988) definition are more likely within psychological

research. Second, given the likelihood of small and medium effect sizes, the comparative research reviewed did not utilize large enough samples to produce adequate statistical power. To illustrate this point, power coefficients were calculated for several MMPI studies which have been reviewed using an effect size of .20 and an alpha level of .05. This effect size was utilized because it falls at the border of small and medium effect sizes as defined by Cohen (1988). Effect size is defined as the population standard deviation between groups, divided by the population standard deviation within groups (Cohen, 1988). For example, in the Roback et al. (1976a, 1976b) studies which compared three groups of 10 subjects each utilizing ANOVA, power to detect a .20 effect size was only .14. In the Tsushima and Wedding study (1979) which compared by ANOVA three groups with a total N of 77, power to detect a .20 effect size was .37. In the Langevin et al. study, (1977) which compared by ANOVA five groups with a total N of 107, power to detect a true difference was .34. All of these power coefficients fall well below the desirable minimum level suggested by Cohen. It is also reasonable to assume that the Rorschach studies which relied upon smaller sample sizes and utilized non-parametric tests would evidence smaller power coefficients. A third factor which negatively impacts on power is the questionable reliability of the Rorschach scoring and interpretive systems utilized in the studies reviewed. As previously noted, Murray (1985) employed scoring and interpretive systems by Holt and Urist to assess borderline manifestations on the Rorschach. It has been suggested by Gartner et al. (1989) that such scales are "often abstract and complex, reliability is sometimes only barely acceptable, and validity is largely unestablished" (p. 430). Lothstein (1980, 1983) does not mention which system was used in scoring his Rorschach protocols nor does he provide interrater reliabilities.

It is likely that both MMPI and Rorschach research on transsexuals are plagued by problems arising from inadequate statistical power. The reliance on inadequate statistical power in the reviewed research may explain the inconsistency between studies, and the inability to detect group differences within studies. Beyond the issue of test power, the

analysis of a large number of dependent variables in several studies without an alpha level correction factor would likely result in a significant proportion of Type I errors. Thus, interpretations of significant and non-significant findings should be considered very tenuous in this literature. Rossi (1990) has made very concrete recommendations for improving statistical power in psychological research. These recommendations include a) increase in sample size; b) use of more reliable psychometric tests; c) control of extraneous sources of variance; and, d) use of multivariate statistical methods. Also, Acklin, McDowell and Orndoff (1992) have recommended that investigators should ascertain the power of a research design apriori on the basis of small and medium effect size predictions. This study will take into account these recommendations in order to improve on statistical power. Procedures for increasing power will be explicated in the following section.

STATEMENT OF THE PROBLEM

The review of the literature clearly shows that various sources of information such as clinical interview, psychoanalytic observation, and objective and projective psychological testing consistently implicate some level of psychopathology in association with the desire for SRS. Both clinical experience and empirical data present a picture of extreme clinical variation among those individuals who request SRS, ranging from mild to severe psychological impairment. The findings of empirical studies are equivocal regarding the level and nature of psychopathology within samples of gender dysphorics. The limitations of empirical studies have been noted, particularly in terms of methodological problems related to statistical power.

Several etiological formulations have been offered from both biological and psychological perspectives. Yet, the nature of the relationship between gender dysphoric symptoms and other psychopathological symptoms has not been empirically demonstrated. It has not been determined whether gender dysphoria is a discrete entity or symptomatic of other underlying conditions. It is not clear whether psychopathological symptoms are related to underlying causes of gender dysphoria, or merely expressions of an individual's normal response to a life long gender dysphoric condition. Overall, the etiology of gender dysphoria is unknown. The best etiological formulation is that gender dysphoria emerges from a complex interaction between predisposing biological factors with a host of life long psychological factors.

The responsibility of determining the suitability of SRS for an individual creates a serious dilemma for clinicians. Clinicians are in need of reliable measures to ascertain levels of psychopathology in individuals who request SRS for the purpose of appropriate treatment recommendations. The most effective test to date for evaluating the suitability of applicants for SRS is the "real-life test." Psychological testing, however, is seen as an essential and required complement to the "real-life test" in most SRS programs.

Both the limitations of past studies and the continued demand for appropriate treatment management underscore the necessity for further research to clearly demonstrate the nature and level of psychopathology likely associated with individuals who request SRS. This study examined the nature and degree of psychopathology in a sample of candidates approved for SRS as reflected on their MMPI clinical scale values and scores on various Rorschach variables. The MMPI data was compared across three groups: 1) a male and female SRS candidate group, 2) a general psychiatric adult inpatient group, and 3) a normal adult group. The Rorschach was scored using the Exner Comprehensive System (1993) and this data was compared to available descriptive statistics and frequency data from the work of Exner (1991). This study attempted to improve upon the limitations of past studies by addressing issues of statistical power and by incorporating appropriate comparison groups.

Because past research has shown a wide range of severity of psychopathology associated with individuals who request SRS, this study utilized comparison groups which clearly reflected a continuum of functioning from normality through severe psychopathology. Because past comparative studies have been adversely affected by inadequate statistical power, this study followed the recommendations of Rossi (1990) and Acklin et al. (1993) in order to provide sufficient statistical power. First, this study planned to increase the number of observations for both MMPI and Rorschach analysis. Examining MMPI data by way of parametric tests across three groups of at least 100 subjects each was expected to yield a power coefficient of .89 based on the expectation of a .20 effect size and the use of a .05 alpha level. Examining the Rorschach variables by way of non-parametric tests between four groups ($n = 100$, $n = 180$, $n = 320$, and $n = 700$) was expected to yield power coefficients approaching or greater than .80 for the majority of hypothesized tests. This level of statistical power is expected to decrease the likelihood of Type II error and increase confidence in the interpretation of significant and non-significant results. Second, this study expected to indirectly increase effect size by

relying upon the Exner Comprehensive System for scoring and interpreting the Rorschach. In terms of scoring, the Rorschach Research Foundation has attempted to insure adequate interscorer reliability for each variable by maintaining a minimum standard of .85 correlation (Exner, 1993). Also, only interpretive postulates which meet fundamental empirical validation are included in the system (Exner, 1993). Thus, the improvement in reliability and validity over past Rorschach systems decreases error variance which can potentially increase effect size. Exner's system was developed in the nomothetic tradition and thus allows descriptive comparisons with normal, inpatient, and character disorder groups. Researchers have found that Rorschach research conducted according to the Comprehensive System yields higher power when compared to other Rorschach systems (Acklin, McDowell & Orndoff, 1992). Third, this study expected to match the MMPI comparison groups according to age, gender and possibly level of education in order to further reduce error variance. Finally, this study expected to utilize multivariate procedures (MANOVA) with the MMPI data to protect against the occurrence of Type I error associated with the execution of multiple tests.

The rationale for utilization of the MMPI and Exner's Comprehensive System of the Rorschach Test arises from both practical and theoretical concerns. First, the MMPI and the Rorschach have been used extensively in past research with transsexuals. Second, both instruments are among the most commonly used psychological assessment tools (Archer, Maruish, Imhof & Piotrowski, 1991; Lubin, Larsen & Matarazzo, 1984; Piotrowski & Keller, 1989), and are the two most extensively researched personality assessment instruments (Butcher, 1987; Exner, 1986; Reynolds & Sundberg, 1976). Third, research shows that the MMPI and Rorschach (Comprehensive System) have comparable reliability and convergent validity and that both demonstrate similar validity to the Wechsler Scales (Parker, 1983; Parker, Hanson & Hunsley, 1988). Fourth, several authors have underscored the utility of using both the MMPI and the Rorschach (Acklin, 1993; Archer & Krishnamurthy, 1993a, 1993b; Weiner, 1993) because these instruments

may represent non-overlapping sources of data (Archer & Gordon, 1988; Archer & Krishnamurthy, 1993a, 1993b; Duricko, Norcross & Buskirk, 1989; Lipovsky, Finch & Belter, 1989). Further, data obtained from these popularly used instruments will be of practical significance for clinicians who work with gender dysphorics.

This study utilized available archival data of SRS candidates who were approved for surgery. Thus, individuals who exhibited, for example, severe psychosis were not included in the gender dysphoric group because they would have been screened out by the examination procedure. Such exclusionary criteria did limit the representativeness of this study's gender dysphoric sample and thus was expected to restrict the generalizability of the findings. The design of this study was not expected to directly address the etiological question regarding the cause and effect relationship between gender dysphoria and other psychopathological conditions. To address such a question would require longitudinal studies incorporating path analysis procedures. Findings from this study, however, were considered to have heuristic value for future etiological investigations.

HYPOTHESES

1. It was hypothesized that the MMPI clinical scale scores for the SRS group would show a lower level of psychopathology when compared to an inpatient psychiatric group, and a higher level of psychopathology when compared to a normal group. Specifically, the overall elevation of the nine clinical scales (excluding scale 5) for the SRS group was expected to be significantly lower than the elevation for the inpatient psychiatric group, and significantly higher than the elevation for the normal group. Thus, examination of the overall elevation of the clinical scales was expected to reveal the following pattern:

Inpatient Psychiatric Group > SRS Group > Normal Group.

2. Based on the similar findings in previous studies, it was hypothesized that scale 2 (e.g., Billingsley, 1984; Langevin et al., 1977), Scale 8 (e.g., Beatrice, 1985; Fleming et al., 1981; Rosen, 1974; Tsoi et al., 1977), and Scale 9 (e.g., Beatrice, 1985; Fleming et al., 1981) would be elevated significantly higher for the SRS group compared to the normal group. Based on the findings of past comparative studies, it was also hypothesized that scales 2, 8, and 9, would be significantly lower for the SRS group when compared to the psychiatric group.

3. Due to consistent clinical elevations of Scale 4 across past studies, it was hypothesized that Scale 4 would not be significantly different between the SRS group and the Inpatient group, but would be significantly higher for the SRS group compared to the Normal group.

4. Consistent with past research, it was hypothesized that the SRS group would produce significantly greater elevations on Scale 5 compared to both the Normal group and the Inpatient Psychiatric group. It was also hypothesized that, within the SRS group, males would exhibit greater elevations on Scale 5 compared to females.

5. It was hypothesized that a greater percentage of subjects in the Psychiatric Inpatient group would produce a clinical elevation on one or more clinical scales when

compared to the SRS group, and that a greater percentage of subjects in the SRS group would produce a clinical elevation on one or more clinical scales compared to the Normal group.

6. It was hypothesized that a greater percentage of subjects in the Psychiatric Inpatient group would produce clinical elevations on at least three or more clinical scales when compared to the SRS group and Normal group. No significant difference was expected to occur between the SRS and Normal groups.

Hypotheses 1, 2, 5 and 6 suggested that the SRS group would exhibit intermediate levels of psychopathology. These hypotheses were considered consistent with the following observations. First, MMPI research on gender dysphoria tends to exhibit variability in terms of clinical elevations and studies have shown a wide range of associated psychopathology from mild to severe. Second, MMPI research reveals consistency on only a few clinical elevations (i.e., Scales 4 and 5). And third, the fifth and sixth hypotheses are consistent with Billingsley (1984) finding that 74% of his gender dysphoric sample produced clinical elevations on at least one scale.

7. It was hypothesized that Rorschach data would show a greater percentage of the SRS group to exhibit psychopathology when compared to the nonpatient adult group, and a lower percentage of the SRS group would exhibit psychopathology when compared to the character disorder group. Significant differences were expected to occur on the following variables:

D Score < 0	$3r + (2) / R < .33$
Adj D Score < 0	Afr < .50
X+% < .70	MOR > 2
F+% < .70	Level 2 Sp. Sc. > 0
X-% > .15	H < 2
(CF+C) > FC+1	Mp > Ma
Sum T = 0	DEPI > 5

Hypothesis seven reflects again the presence of an intermediate level of psychopathology for the SRS group. This hypothesis is consistent with the difference found between Exner's character disorder group and a transsexual sample (Fleming et al., 1982), and the differences found between a normal group and a transsexual group (Murray, 1985). The large sample size in the present study was expected to increase the chances of finding a difference between the character disorder group and the SRS group, a difference which was not found in Murray's study (1985). The Rorschach variables chosen for analysis allowed for continuity with past research in this area (Fleming et al., 1982; Leavitt & Berger, 1993; Lothstein, 1979, 1983; Murray, 1985). These variables reflect factors which are believed to be associated with character disorders: the presence of thought disorder (Level 2 Special Scores), unconventional thinking and poor reality testing ($X+\%$, $F+\%$, $X-\%$), ego weaknesses ($3r + (2) / R$, MOR), low thresholds for frustration and regression under stress (D Score, Adj D Score), impulsivity (D Score, FC:CF+C), narcissism ($3r + (2) / R$), use of fantasy as a defense (Mp:Ma), depression (DEPI Index, MOR), and affective modulation (Afr., FC:CF+C).

An overall finding of intermediate levels of psychopathology would fit the conceptualizations of Stoller (1975), Pauly (1969a,b), and Money and Gaskin (1970-71). Because the SRS group in this investigation is comprised of individuals who have been approved for SRS, clinical experience would suggest that those who are willing and capable of performing the "real-life test" could not do so if impeded by severe psychopathology.

CHAPTER II

METHOD

Subjects and Procedure

Six distinct samples were utilized for the purposes of evaluating the hypotheses in this investigation. For the MMPI analysis, the Psychiatric Inpatient Sample and the Normative Sample were matched to the SRS Candidate Sample according to age and gender. The samples were delineated as follows:

Sex Reassignment Surgery (SRS) Candidate Sample. This sample was comprised of 56 adult biological males and 56 biological females who had requested gender reassignment surgery in one of two medical school related sex reassignment clinics in the mid-Atlantic region of the United States. The sample's test data were selected from archival records. The sample selection was exhaustive and inadvertently resulted in equal numbers of males and females. The mean age was 31.45 years for males and 30.71 years for females. The age range for the entire sample was from 18 to 68 years of age. The mean education level for the total sample was 14 years, with a range from eight to 20 years. The mean Full Scale IQ for the total sample was 106.94, with a range from 72 to 141. Ninety one percent of the sample indicated white for race with five percent indicating black for race. The remaining percentage of the sample either indicated other various ethnic/racial associations or did not indicate any ethnic/racial identity.

Subjects in this study were evaluated between the years of 1970 and 1992 for suitability for participation in irreversible gender reassignment procedures. As part of the admission procedures for both clinics, subjects were administered a battery of psychological tests which included objective and projective personality assessment measures and a series of intellectual or cognitive measures. The sample included only

those individuals who have been diagnosed as transsexuals, and were ultimately approved to participate in the gender reassignment procedure. The stage of psychological test evaluation for gender reassignment applicants typically occurred relatively late in the application process, and after numerous other criteria (see Appendix C) had been met by the applicant. Therefore, the number of transsexual patients who were disapproved following psychological testing did not provide a sufficient sample size for a separate evaluation of this group. It should be noted, however, that an unspecified number of the transsexuals who were approved for participation in the gender reassignment program did not ultimately participate in gender reassignment surgery due to a variety of causes typically related to failure of insurance reimbursement or private funds to allow for the procedure to occur.

Psychiatric Inpatient Sample. This sample consisted of 56 adult males and 56 adult females, selected from MMPI-2 evaluations conducted between 1989 and 1993 in two state hospitals within the Department of Mental Health and Mental Retardation in the Commonwealth of Virginia. These treatment facilities included Eastern State Hospital in Williamsburg, VA and Southwest Mental Health Institute in Danville, VA.

The mean age of the sample was 30.92 years with a range from 18 to 59 years of age. The mean education level of the sample was 12 years with a range from 6 to 18 years. Seventy-nine percent of the sample indicated white as their race. The remaining percentage of the sample included a variety of ethnic/racial identities. The majority of Axis I diagnoses included in the sample were as follows: Major Depression (14.7%), Bipolar Disorders (11.8%), Adjustment Disorder (8.8%), Schizophrenia (7%), Dysthymia (5%), Delusional Disorder (4%), Anxiety Disorders (3%), Psychotic Disorder, NOS (3%), Substance Dependence (7%), and Substance Abuse (10%). The majority of Axis II diagnoses in the sample were as follows: Personality Disorder, NOS (26%), Cluster B Personality Disorders (13%), and Cluster C Personality Disorders (2%).

MMPI-2 Normative Sample. This sample consisted of 56 adult males and 56 adult females, selected from the 2,600 adults in the MMPI-2 normative sample as described by Butcher et al., (1989) in the test manual for this instrument. Subjects were selected to match individuals in the SRS sample for variables of biological gender and age. The mean age was 31.45 for males and 30.68 for females. The age range for the entire sample was from 18 to 68 years of age. The mean education level for the total sample was 14 years, with a range from 8 to 20 years. Seventy nine percent of the sample indicated white as their race, ten percent indicated black as their race, and the remaining percentage of the sample included a variety of ethnic/racial identities.

Rorschach Character Disorder Sample, Inpatient Schizophrenic Sample, and Normative Sample. The character disorder group consisted of 180 adults, of which 112 were male and 68 were female, who were diagnosed with various character disorders. Subjects ranged in age from 18 through 65. The inpatient schizophrenic sample consisted of 320 adults, of which 153 were male and 167 were female. Subjects ranged in age from 18 to 55. The normative sample consisted of 700 nonpatient adults, of which 350 were male and 350 were female. Subjects ranged in age from 18 through over 65.

Frequency data for the variables of interest were obtained from the tables of descriptive statistics published by John Exner, Jr. (1993).

Measures

MMPI/MMPI-2. The original form of the MMPI was utilized in 87% of the records collected for the SRS sample, while the revised form of the test (MMPI-2), which was published in 1989, was utilized in the remaining records. The MMPI-2 was utilized for all of the inpatient psychiatric sample and the normal sample. The MMPI basic scale scores from the SRS group were converted to their estimated T-score values on the MMPI-2 utilizing Table A-1 and Table K-1 in the Appendix of the MMPI-2 manual (Butcher et al., 1989), thus enabling analysis of all the data on the basis of MMPI-2 basic scales. The rationale for converting the MMPI scores into MMPI-2 scores was based on

the concern for improving the future utility and relevance of the findings of this study since future clinical practice and research will more likely rely upon the MMPI-2. Because comparison of profiles across groups was one of the desired objectives of this investigation, T-score values were utilized as the basic dependent measure derived from the MMPI-2 basic scale findings. The F Scale cutting score for assessing MMPI validity (i.e., T-score < 90) provided by Greene (1991) was utilized for inclusion criteria in this investigation and all MMPI response protocols contained less than ten unanswered questions. L and K cutting scores (T-score < 80) as recommended by Butcher et al. (1995) were also utilized as inclusion criteria to control against markedly defensive profiles.

Brief descriptions of each of the validity and clinical scales are provided below. These descriptions are derived from the work of Greene (1991). Numerous studies have supported the validity of the MMPI (Dahlstrom, Welsh & Dahlstrom, 1975), and such studies are considered supportive of the validity of the MMPI-2 due to the continuity between the two tests (Graham, 1990). Average internal consistency coefficients and average test-retest reliability coefficients for time intervals from one day to two years will be reported for each scale. These coefficients were reported in a large-scale meta-analysis of MMPI reliability studies by Hunsley, Hanson and Parker (1988). Most of the scales were developed with the empirical keying method, with the exception of Scales L, E, 5, and Q.

Scale L: A 15 item scale which reflects culturally laudable attitudes and practices found in few people. This scale is used to identify individuals who deliberately or unconsciously try to avoid answering the MMPI honestly. An average internal consistency of .77 and test-retest reliability of .63 has been reported.

Scale E: Sometimes referred to as the frequency or infrequency scale, the 60 items (64 on the MMPI) are used to detect unusual or atypical ways of answering test items. An average internal consistency of .77 and test-retest reliability of .70 has been reported.

Scale K: A 30 item scale used to identify persons who display significant psychopathology yet have profiles within the normal range. The scale is also used as a measure of defensiveness. An average internal consistency of .82 and test-retest reliability of .77 have been reported.

Scale 1 (Hypochondriasis - Hs): A 32 item scale (33 items on the MMPI) which assesses neurotic concerns about bodily functioning. An average internal consistency of .79 and an average test-retest reliability of .78 have been reported.

Scale 2 (Depression - D): A 57 item scale (60 items on the MMPI) which assesses symptomatic depression characterized by poor morale, hopelessness, and general dissatisfaction. An average internal consistency of .81 and an average test-retest reliability of .78 have been reported.

Scale 3 (Hysteria - Hy): A 60 item scale which assesses histrionic dynamics characterized by somatic complaints and the maintenance of a facade of superior adjustment. An average internal consistency of .78 and an average test-retest reliability of .74 have been reported.

Scale 4 (Psychopathic Deviate - Pd): A 50 item scale which assesses general social maladjustment and absence of strongly pleasant experiences. Factor analysis generally yields five factors: shyness, hypersensitivity, delinquency, impulse control, and neuroticism. An average internal consistency of .81 and average test-retest reliability of .71 have been reported.

Scale 5 (Masculinity-Femininity - MF): A 56 item scale (60 items on the MMPI) which attempts to reflect "the tendency toward masculinity or femininity of interest pattern in the direction of the opposite sex" (Colligan et al., 1983, p. 40). It is a heterogeneous scale with major content areas which include interests in vocations and hobbies, aesthetic preferences, activity-passivity, and personal sensitivity. Test-retest reliability coefficients range from .72 to .91 for intervals of up to two weeks. An average internal consistency of .73 and average test-retest reliability of .69 have been reported.

Scale 6 (Paranoia - Pa): A 40 item scale reflecting interpersonal sensitivity, moral self-righteousness, and suspiciousness. An average internal consistency of .73 and average test-retest reliability of .69.

Scale 7 (Psychasthenia - Pt): A 48 item scale which reflects generalized obsessive compulsive reactions, abnormal fears, self-criticism, difficulties in concentration, and guilt feelings. An average internal consistency of .84 and average test-retest reliability of .82 have been reported.

Scale 8 (Schizophrenia - Sc): a 78 item scale which assesses various content areas such as bizarre thought processes, peculiar perceptions, social alienation, poor familial relationships, difficulties in concentration and impulse control, lack of deep interests, disturbing questions of self-worth and self identity, and sexual difficulties. Average internal consistency of .82 and average test-retest reliability of .78 have been reported.

Scale 9 (Hypomania - Ma): a 46 item scale which assesses milder degrees of manic excitement characterized by unstable mood, psychomotor agitation, and flight of ideas. An average internal consistency of .71 and average test-retest reliability of .65 have been reported.

Scale Q (Social Introversion - Si): A 69 item scale (70 on the MMPI) which assesses an individual's degree of introversion-extroversion. The scale was developed using the Minnesota Thinking-Social-Emotional Inventory. Items reflect uneasiness in social situations, feelings of inferiority and discomfort, unhappiness, shyness and hypersensitivity. An average internal consistency of .81 and average test-retest reliability of .86 have been reported.

The Rorschach Test. The Rorschach protocols obtained from the records of the SRS sample were scored according to the Exner Comprehensive System (1991, 1993). The Comprehensive System was designed by integrating the features of five systems (Beck, Klopfer, Hertz, Piotrowski, and Rappaport) for which empirically defensible data existed or could be established. There exists ample literature which indicates that the

variables coded in the Rorschach Comprehensive System can be reliably scored (Exner, 1993). The Rorschach Test has also been shown (Atkinson, 1986; Parker, 1983; Parker, Hanson & Hunsley, 1988) to have an adequate level of convergent validity (the extent to which the test correlates with relevant criteria). For example, in a meta-analysis of Rorschach studies which were published in the Journal of Personality Assessment between 1971 and 1980, Parker (1983) found reliabilities in the order of .83 and higher and validity coefficients of .45 or .50 and higher when "hypotheses supported by empirical or theoretical rationales are tested using reasonably powerful statistics" (p. 227). In a meta-analysis of articles from Psychological Abstracts, Atkinson (1986) found that the conceptual validation studies of the Rorschach were as successful as the conceptual validation studies of the MMPI. In yet another meta-analytic study of articles published in the Journal of Personality Assessment and the Journal of Clinical Psychology between 1970 and 1981, Parker et al. (1988) found average reliability, stability, and validity coefficients of .86, .85, and .41, respectively, for Rorschach validity studies directed theoretically, empirically, or both. In the Parker et al. (1988) study, the Rorschach was not significantly different from the MMPI in terms of reliability, stability and validity.

In order to preserve interpretive validity (Exner, 1993), only those Rorschach protocols containing 14 or more responses were included in this investigation. To ensure reliability, interscorer agreement was examined following the recommendations of Weiner (1991). Twenty protocols were randomly selected and rescored blind by a different examiner for the purpose of obtaining percentages of interscorer agreement and respective Kappa coefficients.

The protocols were scored by the author who was a doctoral candidate for a Psy.D. degree. His training in the Comprehensive System included a one semester graduate course, a week tutorial from the Rorschach Workshops, and approximately three semesters of direct supervision in administration, scoring and interpretation. The individual who rescored the twenty protocols is a Ph.D. clinical psychologist with

approximately ten years of experience using the Comprehensive System with adults and children. He has attended both the tutorial and advanced workshops offered by Rorschach Workshops.

The use of the inclusion criteria of a response frequency ≥ 14 resulted in 32 male Rorschach protocols and 35 female Rorschach protocols for the SRS candidate sample. The mean age for male subjects was 32 and for female subjects was 31. The age range for the sample was from 19 to 66 years of age. The mean Full Scale IQ for the sample was 107. Eighty-eight percent of the sample indicated white for race, with about six percent indicating black for race. The remaining percentage of the sample either indicated other various ethnic/racial associations or did not indicate any ethnic/racial identity.

The following brief descriptions and test-retest reliabilities of the variables of interest for this investigation are derived from the work of Exner (1993).

D Score < 0 and Adj D Score < 0 : The D and Adj D Score are an index of the ability to maintain control under demand or stress situations. Scores of -1 reflect a tendency to become distracted or inefficient when faced with new situations. A one year retest reliability of .91 for the D Score has been reported.

X+% $< .70$: X+% relates to the use of the form features of the blots in a commonplace, reality-oriented manner. When X+% is less than 70% it reflects a tendency to translate stimulus fields in ways that are more atypical. A one year retest reliability of .86 for X+% has been reported.

F+% $< .70$: F+% reflects the percentage of good Pure Form responses in the record. A low percentage reflects limited perceptual accuracy and possibly poor reality testing.

X-% $> .15$: X-% is an index of perceptual-mediational distortion and represents the proportion of uncommon responses in the record that disregard the appropriate use of the contours of the blot. A low X+% with a high X-% would indicate considerable perceptual-mediational impairment.

$M_p > M_a$: This ratio reflects certain aspects of a subject's ideational characteristics. When M_p is greater than M_a , it indicates a tendency to take flight into passive forms of fantasy as a defensive maneuver. One year retest reliabilities of .84 for M , of .83 for a , and .72 for p have been reported.

$MOR > 2$: If the value for Morbid content responses is three or higher, it is likely that thinking is marked frequently by pessimism, relationships are viewed with a sense of doubt, and the outlook for the future is gloomy. Long term retest reliabilities from .66 to .71 have been reported.

Level 2 Special Scores > 0 : The Critical Special Scores are used to identify events in which some difficulty occurred in various aspects of thinking. The presence of level 2 Special Scores would indicate occurrence of faulty thinking as well as the possibility of more severe cognitive slippage.

$(CF+C) > FC+1$: The $FC:CF+C$ Ratio is an index of the extent to which emotional discharges are modulated. When the value for $CF+C$ is equal to or as much as two points greater than the value for FC , and the value for pure C is zero or one, it suggests less stringency about modulating emotional discharges than is the norm. One year retest reliabilities of .86 for FC and .81 for $CF+C$ have been reported.

$Afr < .50$: The affective ratio provides information about the responsiveness of a person to emotional stimulation. A less than average affective ratio indicates a marked tendency to avoid emotional stimuli. This may result in social isolation. A one year retest reliability of .82 has been reported.

$3r+(2) / R < .33$: The Egocentricity Index is an estimate of self-concern and possibly self-esteem. An Egocentricity Index of .32 or lower suggests a very negative estimate of personal worth. A one year retest reliability of .89 has been reported.

$H < 2$: Human Content reflects interest in others. The absence of human content may signal a marked lack of interest in and/or detachment from people.

T = 0 : Texture is related to needs for affection and closeness with others. Those who do not give Texture responses appear to be more guarded and/or distant in interpersonal contacts.

DEPI : The Depression Index consists of 15 variables. A DEPI value of 5 indicates the presence of several features that are common among individuals diagnosed as being depressed or having an affective disorder.

CHAPTER III

RESULTS

MMPI-2

Preliminary Analysis

MMPI-2 validity and clinical scale profiles were derived for each individual from the SRS Candidate Sample using both male and female norms (See Figure 1 and Table 1). The T-scores for the validity and clinical scales, based on the biological sex of the individual, were compared to the T-scores based on the desired sex of the individual via multivariate analysis of variance (MANOVA). The Wilks' Criteria indicated a significant overall main effect $F(13, 210) = 11.66, p < .001$. However, when scale 5 was removed from the equation, the MANOVA did not indicate any significant effect between basic scale T-scores based on individuals' biological sex versus T-scores based on individuals' desired sex. These findings suggested that conducting separate analyses using profiles based on biological sex versus profiles based on desired sex would yield redundant information. The initial decision to utilize the biologically based profiles for statistical analysis in testing this study's hypotheses were thus considered appropriate and adequate.

Insert Figure 1 about here

Insert Table 1 about here

Analysis of Variance

The T-scores from the validity and clinical scales were examined between the three samples (SRS Candidate Sample, Psychiatric Inpatient Sample, MMPI-2 Normative Sample) using multivariate analysis of variance (MANOVA) in a 2 x 3 between-subjects design. The independent variables were gender of subject and the three groups representing various degrees of psychopathology. The Wilks' criterion indicated a significant group main effect, $F(26, 636) = 29.40, p < .001$, a significant gender main effect, $F(13,318) = 1.91, p < .05$, and a significant interaction between gender and group, $F(26,636) = 2.53, p < .001$. The mean MMPI-2 profiles for each sample are represented in Figure 2.

Insert Figure 2 about here

The significant results from the MANOVA warranted the application of the appropriate univariate tests to each validity and clinical scale. For the univariate tests, a significance level of .01 was utilized as a partial correction for conducting multiple tests. As a result of implementing a partial correction, univariate analysis of variance did not indicate any significant interactions on the individual scales.

Univariate analysis of variance indicated a significant main effect associated with group membership for each of the validity and clinical scales (see Table 2). The Tukey's Studentized Range Test was applied to each significant effect. On the **L** Scale, the normative group scored lower than both the SRS candidate group and the psychiatric group. On the **E** Scale, the psychiatric group scored higher than both the SRS candidate group and the normative group. On the **K** Scale, the SRS candidate group scored higher than both the psychiatric group and the normative group. On scale **1**, the psychiatric group scored higher than both the SRS candidate group and the normative group. On scale **2**, the psychiatric group scored higher than the SRS candidate group, and the SRS

group scored higher than the normative group. On scale 3, the psychiatric group scored higher than both the SRS candidate group and the normative group. On scale 4, the psychiatric group scored higher than the SRS candidate group, and the SRS candidate group score higher than the normative group. On Scale 5, the SRS candidate group scored higher than both the psychiatric group and the normative group. On Scale 6, the psychiatric group scored higher than both the SRS candidate group and the normative group. On Scale 7, the psychiatric group scored higher than both the SRS candidate group and the normative group. On Scale 8, the psychiatric group scored higher than both the SRS candidate group and the normative group. On scale 9, the psychiatric group scored higher than both the SRS candidate group and the normative group. On Scale 0, the psychiatric group scored higher than both the SRS candidate group and the normative group. Overall, the SRS group scored significantly higher than the normal group on scales L, K, 2, 4, and 5, and scored significantly lower than the psychiatric group on scales E, 1, 2, 3, 4, 6, 7, 8, 9, and 0.

Insert Table 2 about here

Chi Square Analysis

Chi-Square Analysis was utilized to examine the relationship between clinical elevation (T-Score ≥ 65) of MMPI-2 scales 1, 2, 3, 4, 6, 7, 8, 9, and 0 and group membership (See Figure 3). Chi-Square Analysis indicated a significant relationship between group membership and clinical elevation of one or more scales, $\chi^2(2, N = 336) = 106.05, p < .001$, a significant relationship between group membership and clinical elevation of two or more scales, $\chi^2(2, N = 336) = 124.20, p < .001$, and a significant relationship between group membership and clinical elevation of three or more scales, $\chi^2(2, N = 336) = 138.22, p < .001$. A greater percentage of individuals from the psychiatric

group had one or more clinically elevated scales when compared to the SRS group, $\chi^2(1, N = 224) = 84.70, p < .001$, and when compared to the normative group, $\chi^2(1, N = 224) = 86.81, p < .001$. There was no significant difference in clinical elevation of one or more scales between the SRS and normative groups. A greater percentage individuals from the psychiatric group had two or more clinically elevated scales when compared to the SRS group, $\chi^2(1, N = 224) = 85.02, p < .001$, and when compared to the normative group, $\chi^2(1, N = 224) = 92.60, p < .001$. There was no significant difference in clinical elevation of two or more scales between the SRS and normative group. A greater percentage of individuals from the psychiatric group had three or more clinically elevated scales when compared to the SRS group, $\chi^2(1, N = 224) = 84.29, p < .001$, and when compared to the normative group, $\chi^2(1, N = 224) = 98.63, p < .001$. There was no significant difference in the clinical elevation of three or more scales between the SRS and normative group.

Insert Figure 3 about here

Chi-Square analysis utilizing a 2 x 3 contingency table on each individual MMPI-2 validity and clinical scale indicated a significant relationship between clinical elevation and group membership on scales L, E, 1, 2, 3, 4, 5, 6, 7, 8, 9, and Q (see Table 3). A level of significance at .01 was utilized as a partial correction for multiple tests. Chi-Square analysis utilizing a 2 x 2 contingency table indicated the following significant differences between groups: 1) A greater percentage of individuals from the psychiatric group obtained clinical elevations when compared to the SRS group on Scales E, 1, 2, 3, 4, 6, 7, 8, 9, and 1Q (see Table 4); 2) A greater percentage of individuals from the psychiatric group obtained clinical elevations when compared to the normative group on Scales L, E, 1, 2, 3, 4, 6, 7, 8, 9, and Q (See Table 5); 3) A greater percentage of individuals from the

SRS group obtained clinical elevations when compared to the normative group on Scales L, 4, 5, and 6 (see Table 6); 4) A greater percentage of individuals from the normative group obtained clinical elevations when compared to the SRS group on Scale 2 (see Table 6); 5) A greater percentage of individuals from the SRS group obtained clinical elevations when compared to the psychiatric group on Scale 5 (see Table 4); and, 6) A significant difference in the percentage of individuals obtaining clinical elevations occurred between all three groups on Scale 6.

Insert Tables 3, 4, 5, and 6 about here

SRS Sample Gender Differences

The mean T-scores for the validity and clinical scales of the SRS group were compared between biological males and biological females via MANOVA (see Figure 4). The Wilkes' criterion indicated a significant gender effect, $F(13, 98) = 4.98, p < .001$. Univariate analysis of variance did not indicate a significant gender difference on any basic scale when using a significance level of .01 as a partial correction for multiple tests. Table 7 lists the means and standard deviations for each validity and clinical scale according to gender.

Insert Figure 4 about here

Insert Table 7 about here

Chi-Square analysis did not indicate a significant relationship between clinical scale elevation and biological gender within the SRS sample (see Table 8).

Insert Table 8 about here

Rorschach Test

Preliminary Analysis

The use of the inclusion criteria of a response frequency ≥ 14 resulted in 32 male Rorschach protocols and 35 female Rorschach protocols for the SRS candidate sample. Thus, from a sample of 112 Rorschach protocols, 40% were excluded from analysis due to a response frequency of 13 or less. The group of SRS candidates whose Rorschach protocols met the inclusion criteria were compared to the group of SRS candidates whose protocols were excluded from study in terms of gender, age and MMPI-2 basic scale profiles. One-way analysis of variance did not indicate a significant age difference between the groups. The mean age for male subjects was 32 and for female subjects was 31. The age range for the sample was from 19 to 66 years of age. Chi-Square analysis did not indicate an association between gender and group membership. Multivariate analysis of variance examining the MMPI-2 profiles across the two groups did not indicate a significant group main effect. Table nine presents mean T-scores and standard deviations for the group of SRS candidates with Rorschach response frequencies of 13 or less and the group with response frequencies of 14 or more. Figure five presents the mean MMPI-2 profiles for each group.

Insert Table 9 about here

Insert Figure 5 about here

Interscorer reliability for the Rorschach was obtained by an approach suggested by Exner (1991). Each score was broken into nine segments which included (1) Location, (2) developmental quality, (3) determinants, (4) form quality, (5) pairs, (6) contents, (7) Popular, (8) Z score, and (9) Special Scores. A cumulative tally of agreements and disagreements for each segment was recorded and the percentage of concurrence was calculated for each segment. Kappa coefficients (Cohen, 1960) were also calculated for each segment. Kappa is defined as the proportion of agreements between paired observations corrected for chance agreement. Separate interscorer reliabilities were also calculated for the 14 variables evaluated as part of this study's hypotheses. However, kappa coefficients were not calculated for these 14 variables due to the extreme base rates. The use of the kappa coefficient for samples having extreme prevalence rates has been highly criticized (Spitznagel & Helzer, 1985; Uebersax, 1987) since kappa tends to fluctuate with extreme changes in sample base rates. Table ten lists the percentage of agreement and kappa coefficients for each of the major categories and associated variables. Table 11 lists the percentage of agreement for the 14 Rorschach variables of concern to this study's hypotheses. The percentage of agreement for the major categories ranged from a high of 94.77% for Location to a low of 82.08% for Determinants. The average percentage of agreement for the major categories was 88.73%. The percentage of agreement for the 14 variables of interest ranged from 100.00% for $Afr < .50$, $H < 2$, and $Mp > Ma$, to 70.00% for $F+% < .70$. The average percentage of agreement for the 14 variables was 88.21%. Overall, the obtained reliability rates were considered to have exceeded the 80% criterion suggested by Weiner (1991). Only one variable of interest ($F+% < .70$) was dropped from further statistical analysis due to an unacceptable level of agreement.

Insert Tables 10 and 11 about here

Chi Square Analysis

Chi Square analysis was utilized to examine the relationship between positive scores on selective Rorschach variables from hypothesis seven and group membership. A significance level of .01 was utilized as a partial correction for multiple tests. The groups included the SRS sample from this study, Exner's Nonpatient Adult Sample, Exner's Character Disorders Sample, and Exner's Inpatient Schizophrenic Sample (Exner, 1993). Chi Square analysis utilizing a 2 x 4 contingency table indicated a significant relationship between Rorschach scores and group membership for each of the selected variables (see Table 12).

Insert Table 12 about here

Chi Square analysis utilizing a 2 x 2 contingency table indicated significant differences on 11 of the selected Rorschach variables between the SRS sample and Exner's Nonpatient Adult Sample (See Table 13). A greater percentage of individuals from the SRS sample scored positive on $D < 0$, $Adj < 0$, $X+ \% < .70$, $X- \% > .15$, $CF+C > FC+1$, $Sum T = 0$, $3r+(2)/R < .33$, $Afr < .50$, $Lvl 2 Sp.Sc. > 0$, $H < 2$, and $DEP \geq 5$ when compared to the Nonpatient Adult Group. There were no significant differences between the SRS sample and the Nonpatient Adult sample regarding scores on $MOR > 2$ and $Mp > Ma$.

Insert Table 13 about here

Chi Square analysis utilizing a 2 x 2 contingency table indicated significant differences on three of the selected Rorschach variables between the SRS sample and Exner's Character Disorders sample (see Table 14). A greater percentage of individuals

from the Character Disorders sample scored positive on Lvl 2 Sp. Sc. > 0 , $H < 2$, and $Mp > Ma$ when compared to the SRS sample. There were no significant differences between the SRS sample and the Character Disorders sample regarding scores on $D < 0$, $Adj D < 0$, $X+% < .70$, $X-% > .15$, $CF+C > FC+1$, $Sum = T$, $3r+(2)/R < .33$, $Afr < .50$, $MOR > 2$, and $DEPI \geq 5$.

Insert Table 14 about here

Chi Square analysis utilizing a 2 x 2 contingency table indicated a significant differences on six of the selected Rorschach variables between the SRS sample and Exner's Inpatient Schizophrenic sample (see Table 15). A greater percentage of individuals from the SRS sample scored positive on $Adj D < 0$ when compared to the Inpatient Schizophrenic sample. A greater percentage of individuals from the Inpatient Schizophrenic group scored positive on $X+% < .70$, $X-% > .15$, $MOR > 2$, $Lvl 2 > 0$, and $Mp > Ma$ when compared to the SRS sample. There were no differences between the SRS sample and the Inpatient Schizophrenic sample with regard to scores on $D < 0$, $CF+C > FC+1$, $Sum T = 0$, $3r + (2) / R < .33$, $Afr < .50$, $H < 2$, and $DEPI \geq 5$.

Insert Table 15 about here

SRS Sample Gender Differences

Chi Square analysis utilizing a 2 x 2 contingency table on the SRS sample did not indicate a significant relationship between obtained Rorschach scores and biological gender for all Rorschach variables selected in hypothesis seven.

Statistical Power

For the examination of MMPI-2 data via analysis of variance, the total sample size of 336 with an alpha level of .05 yielded a power coefficient of .92 based on the expectation of a .20 size effect. Utilizing an alpha level of .01 yielded a power coefficient of .78.

The chi-square analysis for each of the MMPI-2 basic scales yielded power coefficients ranging from .52 to 1.00 (see Table 16). The power coefficients for the Rorschach analysis ranged from .45 to 1.00 based on a two tailed test at the alpha level of .01 (see Table 17).

Insert Tables 16 and 17 about here

CHAPTER IV

DISCUSSION

MMPI-2

It was hypothesized that the SRS sample would exhibit an intermediate level of psychopathology by scoring higher relative to a normal sample and by scoring lower relative to an inpatient psychiatric sample in terms of clinical scale mean T-scores and in terms of the percentage of individuals who produced clinical elevations. The overall results of the MMPI-2 analyses suggested that the approved candidates for SRS were less deviant than expected. As predicted by the first, second, fifth and sixth hypotheses, there was a marked difference between the SRS group and the inpatient psychiatric group on all clinical scales; the SRS group evidenced markedly less psychopathology than the inpatient psychiatric group (with the exception of Scale 5). However, contrary to predictions, the SRS group appeared strikingly similar to the normative group. No mean T-score differences were found between the SRS group and the normative group on Scales 1, 3, 6, 7, 8, 9, and 0, and no differences were found on Scales 1, 2, 3, 4, 7, 8, 9, and 0 in terms of the percentage of individuals who obtained clinical elevations. As predicted by hypothesis two, mean T-scores on Scale 2 fit the overall hypothetical model: Inpatient Psychiatric Group > SRS Group > Normal Group. The hypothetical model also applied to the mean T-scores on Scale 4.

The striking similarity between the SRS and normative groups which occurred in this study can be explained from several perspectives. These perspectives include sample selection, motivation in test-taking, as well as the nature of gender dysphoria itself. An explication of each perspective will show that factors from each perspective may interact and play a role in producing a basically normal MMPI-2 profile for the SRS group.

The first perspective involves the issue of sample selection and the inclusion and exclusion parameters set for group membership. As the title of this study indicates the transsexuals in this study were a highly selected group of individuals. The testing data analyzed in this study were obtained from gender reassignment clinics that required individuals to complete successfully the criteria set forth by the standards of care by Walker et al. (1985). As noted by several researchers (Laub & Fisk, 1974; Lothstein & Brown, 1993; Money and Gaskin, 1970), successful completion of such criteria is considered evidence of a substantial psychological stability. Thus, the SRS group's normal range MMPI-2 mean profile (excluding Scale 5 results) is reflective of a highly selected and well defined group of transsexuals, i.e., transsexuals capable of coping with rigorous selection criteria. The results also suggest that the gender reassignment clinics from which this study's sample was obtained were successful in screening appropriate and relatively stable individuals for surgery.

The findings of this study, as well as past studies, support the notion that selectivity of sample plays a predominant role in influencing the level of disturbance obtained on the MMPI. Male transsexuals who live consistently in the female role appear significantly less disturbed on the MMPI when compared to male transsexuals who have not lived in the female role (Greenburg & Laurence, 1981; Langevin, Paitich & Steiner, 1977). Also, Lothstein's sample of post-operative transsexuals (1980) appeared less deviant than his sample of aging gender dysphorics (1979). Finney et al.'s study (1975), which found an association between an intermediate level of psychopathology and transsexualism, utilized a sample of patients "seeking" SRS. Roback et al. (1976a, 1976b) utilized candidates for SRS, while Rosen (1974) utilized patients who presented themselves with "self-described" problems in gender identity. If the current study's transsexual sample had included individuals who were not approved for surgery, the sample may have appeared more deviant when compared to the normative sample.

A second perspective from which the SRS normal range MMPI mean profile can be explained involves an individual's test taking attitude and motivation to appear normal on psychological tests. It has been suggested (e.g., Graham, 1990) that persons taking the MMPI for employment screening and child custody cases are highly motivated to present themselves in a positive light and are likely to produce defensive MMPI profiles because of the consequences of abnormal test results. It is understandable that individuals requesting SRS will be cautious in their approach to psychological testing, since test results carry significant consequences. Viewed from this perspective, Tsushima and Wedding (1979) have suggested that normal range MMPI results obtained from transsexuals are a function of the desire to qualify for surgery.

In this study, the SRS candidate group appeared mildly more defensive on the MMPI validity scale triad when compared to the normative group. The SRS candidate sample obtained the following mean T-score validity triad: **L** = 58, **F** = 53, and **K** = 53 based on the MMPI-2 norms, or **L** = 54, **F** = 53, and **K** = 58 based on the original MMPI. The mean T-scores for Scales **L** and **K** were significantly higher for the SRS group compared to the normative group. The percentage of individuals from the SRS group obtaining elevations of equal to or greater than 65 was 27% for Scale **L** and 12% for Scale **K**. The mean MMPI-2 elevation of the **L** Scale is within the moderate range, a range obtained by "normal persons who are slightly more conforming than usual or clients who have a tendency to resort to denial mechanisms" (Greene, 1991, p. 109). The mean elevation of the **K** Scale based on the original MMPI norms is considered in the moderate range, a range obtained by individuals "who are being defensive and unwilling to acknowledge psychological distress" (Greene, 1991, p. 117). However, a **K** Scale score in the moderate range can also be indicative of individuals who are well adjusted, insightful and self-reliant. The mean elevation of the **K** Scale based on MMPI-2 norms and the mean elevation of the **L** Scale based on the original MMPI norms are considered within the normal range.

In terms of test-taking attitudes, although the SRS candidates were somewhat more defensive in their approach relative to the normative group, the validity profile of the SRS candidate group can be considered in the normal range. This study attempted to control against markedly defensive profiles by utilizing cutting scores for Scales **L** and **K** as recommended by Butcher et al. (1995). Also, the mean T-score validity profile obtained by the SRS candidate sample did not suggest a degree of defensiveness that would invalidate interpretation of their clinical profile. Thus, in light of the mild elevations on Scales **L** and **K** and due to the use of appropriate cut off scores, it can be argued that the desire to qualify for surgery contributed minimally to the production of a normal profile for the SRS sample. As such, the MMPI profile obtained by SRS candidates can be considered a valid reflection of their psychological state at the time of testing.

The third perspective from which to interpret the MMPI results involves the nature of gender dysphoria and its association with other psychopathology. If the invalidating effects of a markedly defensive attitude toward test taking can be ruled out, then the relatively normal range MMPI-2 profile (excluding Scale **5**) obtained by the SRS sample strongly suggests that candidates for SRS can experience normal psychological functioning apart from their gender dysphoria. The results of the MMPI analyses are consistent with the non-conflictual theory espoused by Stoller (1975, 1985), Money (1986) and Money and Gaskin (1970-71). Overall, the MMPI-2 results lend strong support to the notion that transsexualism (gender identity disorder) can exist independently of other psychopathology. The results also seriously challenge the notion that transsexualism is the result of severe character pathology (Socarides, 1969, 1988; Volkan, 1974, 1979).

Several differences did occur between the SRS candidates and the normative sample which was suggestive of the presence of a mild level of psychological distress in the SRS candidate group. The predicted pattern of an intermediate T-score, somewhere between the more elevated T-score of the psychiatric group and the normal range score of

the normative group, occurred for the SRS candidate group on Scales 2 and 4. Also, a greater percentage of individuals from the SRS candidate group produced clinical range elevations on Scale 6 compared to the normative group. Although elevations on Scale 2 are consistent with past studies (Fleming et al., 1981; Rosen, 1974; Tsoi, Kok & Long, 1977), the mean T-score of the SRS group for Scale 2 is considered in the normal range, a range obtained by individuals with "a typical number of attitudes and behaviors that reflect symptomatic depression" (Greene, 1991, p. 144). Only twelve percent of the sample obtained scale 2 T-scores of 65 and above, a range indicative of general sadness, depressed mood, guilt, hopelessness, and self-depreciation. The mean T-score on Scale 4 for the SRS candidate group is also considered in the normal range, a range obtained by individuals who "have a typical number of complaints about authority, alienation, and boredom" (Greene, 1991, p. 155). Although elevations on Scale 4 are consistent with past studies (Bernard & Ross, 1986; Fleming et al., 1981; Hunt, Carr & Hampson, 1981; Langevin, Paitich & Steiner, 1977; Lothstein, 1980, 1983; Roback et al., 1976a; Rosen, 1974; Steinmeyer, 1986), only seventeen percent of the SRS sample obtained Scale 4 T-scores of 65 and above, a range indicative of rebelliousness and hostility toward authority figures. Only 12 percent of the SRS candidate group obtained Scale 6 T-scores of 65 or greater. The mean T-score for Scale 6 was well within the normal range.

Although there is general consistency across studies with regards to Scales 2 and 4, the mean T-scores and percentage of clinical elevations from this study were less pronounced than past studies. Overall, the mean T-scores for Scales 2, 4 and 6 of the SRS candidate group were within the normal range, and the percentage of clinical elevations for Scales 2 (12%), 4 (17%), and 6 (12%) were minimal. Thus, the difference between the SRS candidate group and the normative group was considered subtle and not indicative of serious psychopathology. There was no evidence for excessive agitation or emotional distress, nor evidence for paranoid, psychotic, or delusional features as suggested by some researchers (i.e., Beatrice, 1985; Lothstein, 1980, 1983; Burnard &

Ross, 1986). The MMPI-2 results tend to suggest that within a sample of SRS candidates there may be a small percentage of individuals who are experiencing mild depressive symptoms (Scale 2), feelings of alienation (Scale 4), and/or feelings of suspiciousness (Scale 6). However, the most striking feature of the MMPI-2 results is the overall normal profile obtained by the SRS candidate sample.

The relatively small MMPI-2 differences between the SRS candidate group and the normative group likely reflect the stress and alienation experienced by transsexuals as a consequence of living an unconventional lifestyle. It is reasonable to deduce that individuals who live with the condition of gender dysphoria will experience difficulties in social adaptation. It is also reasonable to postulate that subjective distress, depressive features, and suspiciousness can be fueled by a lifelong condition of gender dysphoria and by the impact of negative social attitudes towards individuals with gender identity problems. Moderate elevations on Scale 4 (MMPI-2 T-score range of 58 to 64) may be obtained by individuals who "have adjusted to an habitual level of interpersonal and social conflict" (Greene, 1991, p. 155). The consistent elevations obtained by transsexuals on scale 4 likely reflect chronic feelings of isolation and a deep rooted sense of being different from the majority of people.

RORSCHACH TEST

The overall results from the Rorschach analyses evidenced a greater level of psychopathology associated with gender dysphoria than was expected by hypothesis seven. Contrary to predictions, no differences occurred between the SRS candidate group and the character disorder group on the following variables: $D < 0$, $Adj D < 0$, $X+\% < .70$, $X-\% > .15$, $CF+C > FC+1$, $Sum T = 0$, $3r+(2)/R < .33$, $Afr < .50$, $MOR > 2$, and $DEP \geq 5$. As predicted, the SRS candidate group produced an intermediate level of psychopathology compared to Exner's (1991) normative and character disorder samples in terms of the following variables: $Lvl2 > 0$, $H < 2$, and $Mp > Ma$. The SRS candidate

sample was clearly distinguished from the inpatient schizophrenic sample in terms of $X^{+}\% < .70$, $X^{-}\% > .15$, $MOR > 2$, $Lvl\ 2 > 0$, and $Mp > Ma$.

On the Rorschach the SRS candidates appeared different from the normal sample and very similar to the character disordered sample. The SRS candidates were similar to the Character disorder sample on ten of the 13 variables chosen for examination. Each variable can be interpreted according to Exner's Comprehensive System (1991). Thirty percent of the SRS candidate sample obtained a D score less than zero which is indicative of a "considerable potential" for impulsiveness in thinking, affect, and behaviors. Twenty four percent of the SRS candidates obtained an Adjusted D score less than zero which is indicative of problems with the ability to deal effectively with stress. This finding indicates that about a quarter of the SRS candidate sample was in a "state of chronic stimulus overload" (Exner, 1991, p. 163). Eighty one percent of the SRS candidate sample obtained an $X^{+}\%$ less than .70. Individuals who obtain such a score are oriented toward making more unconventional translations of their environment and engaging in patterns of less conventional behaviors than the majority of people. Such an orientation is seen as reflecting individualism and/or social alienation. Sixty-nine percent of the sample obtained an $X^{-}\%$ greater than .15 and 34% of the sample obtained an $X^{-}\%$ greater than .20. Individuals who obtain such scores usually have significant problems in thinking which promote perceptual inaccuracy and mediational distortion. In other words, such individuals will likely evidence distorted interpretations of reality. Twenty seven percent of the sample obtained a $(CF+C) > FC+1$. Individuals who obtain this score are "somewhat less stringent about modulating emotional discharges" than the majority of adults. Such individuals are likely to be more intense in expressing feelings than the average person. Seventy five percent of the sample obtained a $Sum\ T = 0$. Such individuals tend to be "overly concerned with personal space and much more cautious about creating or maintaining close emotional ties with others" (p. 184). Thirty six percent of the sample obtained an Egocentricity Index of less than .33 which is indicative

of a negative estimate of personal worth. Thirty-seven percent of the sample obtained an Affective Ratio of less than .50 indicative of a discomfort around emotion and a proneness to becoming socially isolated. Eight percent of the sample obtained a DEPI = 5 which is suggestive of the presence of depressive features. An additional 3% of the sample obtained a DEPI > 5. According to Exner (1991), "the value of five (on the DEPI) probably reflects the presence of a psychological organization that can easily give rise to experiences of depression or fluctuations in mood" (p. 25). Overall, the results suggest that a significant percentage of transsexuals may exhibit similar psychological problems as that exhibited by character disordered individuals. As reflected by the Rorschach variables of interest, both SRS candidates and individuals with character disorders may tend to exhibit poor stress tolerance, unconventional thinking and behaviors, perceptual and mediational cognitive distortions, less stringent emotional control, guarded interpersonal styles, discomfort with emotion, low self-esteem, and mild depressive features.

Although the SRS candidate sample and the character disorder sample were highly similar, the Rorschach results also suggested that the SRS candidates were dissimilar from the character disorder sample in terms of variables that represented a more serious degree of psychopathology. As indicated by the presence of Level 2 Special Scores, a greater percentage of Character Disordered individuals are likely to exhibit serious problems in thinking, problems which promote faulty judgment and inconsistent patterns of decision making. As indicated by a low frequency of human responses, character disordered individuals are more likely to exhibit a marked lack of interest in people. And finally, as indicated by the active/passive human movement ratio, character disordered individuals are more likely to take flight into fantasy when faced with stressful situations.

The results of the Rorschach clearly indicated that the SRS candidates were less likely to manifest psychotic thinking when compared to the Inpatient Schizophrenic sample. The SRS candidate sample was clearly distinguished from the inpatient schizophrenic sample in terms of variables ($X+\% < .70$, $X-\% > .15$, Lvl 2 Sp.Sc. > 0 , Mp

> Ma) which reflect problems with the cognitive processes of cognitive mediation (the translating or identifying of incoming information) and ideation (the conceptualizing of information that has been translated). Compared to the inpatient schizophrenics, the SRS candidates were less likely to exhibit pessimistic thinking ($MOR > 2$).

It is of interest to note that compared to the inpatient schizophrenics, a greater percentage of SRS candidates obtained an Adjusted D score less than zero which is indicative of problems with stress tolerance. It seems reasonable to speculate that if the SRS candidates are less likely to experience a psychotic thinking process, then they may be more clearly aware of environmental and intrapsychic stressors compared to inpatient schizophrenics. This may account for the greater vulnerability toward becoming overwhelmed by stress. The D and Adj D scores may have also been influenced by an above average Lambda and a below average Affective Ratio, possibly resulting in a lower EA. Forty percent of the SRS candidate sample obtained a Lambda $> .99$, and 37% of the sample obtained a Afr $< .50$.

The Exner Comprehensive system is able to make the distinction between less severe cognitive distortions represented by X-% and significant problems in thinking represented by Level 2 Special Scores. This system is also able to make the distinction between a guarded interpersonal stance as represented by T = 0 and a marked lack of interest in people as represented by H < 2 . The Rorschach data from this study was able to provide a more delineated personality picture of transsexuals than was previously provided by past research. Transsexuals may be prone to cognitive distortions but are less likely to exhibit serious problems in thinking as exhibited by individuals with severe character pathology. Transsexuals are also guarded and alienated from others, but they are less likely to exhibit a marked disinterest in other people. The findings of this study challenge Murray's conclusion that transsexuals are similar to individuals with a borderline personality organization. Transsexuals may share similar features with individuals having

a borderline personality organization, however, the Rorschach results from this study suggest the possibility of subtle differences between the two groups.

The results of the Rorschach provide support for the conclusion that transsexuals are different from the normal population and that transsexualism may be associated with various psychological problems which are characteristic of individuals with a personality disorder. The results may also appear to support the theories (Socarides, 1969, 1988; Volkan, 1979; Volkan & Bhatti, 1973) which consider transsexualism a sexual perversion and variation of borderline personality organization. However, the majority of the transsexual sample did not score positively on most of the variables of interest, and the majority was clearly distinguished from the psychotic sample. As such, these findings tend to undermine the contention that most transsexuals have a borderline personality organization. It is more accurate to say that, on the Rorschach, transsexuals will appear similar to character disordered individuals. For example, the majority of the transsexual sample did evidence the potential for unconventional thinking and behaviors, perceptual and mediational cognitive distortions, and guarded interpersonal interactions. Such disturbances can be explained, as were the disturbances noted on the MMPI results, by such factors as living with the lifelong condition of gender dysphoria and the impact of negative social attitudes. Further, the Rorschach findings do not provide evidence for the notion that transsexualism is the direct result of a severe underlying psychopathology. Projective results are more consistent with Stoller's (1968) observation that transsexualism is likely associated with a mild to moderate degree of psychopathology. Overall, the Rorschach findings do not necessarily undermine the notion that transsexualism may exist independently of another underlying pathological condition.

The Rorschach findings from this study were consistent with the Murray's (1985) findings, but contrary to Fleming et al.'s (1982) findings, in that the SRS candidates appeared more deviant compared to normals. Like the Murray study, the transsexual sample in this study appeared very similar to the character disorder sample. The findings

of this study are also consistent with past studies (Burnard & Ross, 1986; Lothstein, 1979, 1983; Murray, 1985) in terms of lower form quality, low stress tolerance, proneness to impulsive thinking and behavior, lack of texture response, depressive features, and problems in reality testing. However, this study went beyond Murray's study and other past studies in showing more subtle, yet significant, differences between transsexuals and character disordered individuals in terms of severe psychopathological thought processes.

GENDER DIFFERENCES

On the MMPI-2, no significant gender differences were indicated; biological male SRS candidates appeared similar biological female SRS candidates. This finding was not consistent with past studies (i.e., Billingsley, 1984; Hunt, Carr & Hampson, 1981; Lothstein, 1984; Rosen, 1974) which tended to indicate that male transsexuals were more psychologically distressed than female transsexuals. The results of the Rorschach analyses also did not indicate any significant gender differences. The lack of gender differences in this study may likely be the result of using a relatively large and equal number of male and female transsexuals. Past studies were significantly skewed in the direction of examining male transsexuals. The inclusion of more biological females in this study likely improved on the representativeness of the sample. This may have resulted in negated previously observed gender differences.

As expected, both biological males and females produced clinical elevations Scale 5. Contrary to expectation, the results in this study did not indicate a significant gender difference on Scale 5 for the SRS candidates. However, when the MMPI-2 T-scores are reverted back to the original MMPI T-scores, a significant gender difference is indicated (see Appendix E). On the original MMPI, biological male SRS candidates were more extreme in endorsing feminine items than the biological females were in endorsing masculine items. The observable change in Scale 5 scores between the MMPI and MMPI-2 can be explained in terms of the differences between the normative samples utilized for each test. The normative sample for the MMPI-2 varies significantly from the original

normative sample in that it has a higher level of education and occupational status (Greene, 1991). It has been noted that scores on Scale 5 tend to be about 10 T points lower in men and 2 to 3 T points higher in women on the MMPI-2 than on the original MMPI (Greene, 1991). Thus, male transsexuals will appear less extreme on the MMPI-2 than on the MMPI.

THE MMPI AND RORSCHACH INTERFACE

The data from this study produced a bimodal picture of transsexualism: on the MMPI-2, the SRS candidates appeared strikingly similar to the normal sample, while on the Rorschach, the SRS candidates appeared different from the normal sample and very similar to the character disordered sample. This bimodal picture is consistent with Lothstein's study (1983) in which a transsexual sample appeared more deviant on the Rorschach test than on the MMPI. The divergent picture which emerges when comparing the results of both tests raises serious questions concerning differences between the Rorschach and MMPI samples, the validity of each test, and the basic differences between the two tests and the phenomena they measure.

Forty percent of the Rorschach protocols from the SRS candidate sample contained less than 14 responses and were thus excluded from analysis. As a result, the Rorschach sample ($n = 67$) was significantly smaller than the MMPI sample ($n = 112$). The significant proportion of Rorschach protocols excluded from analysis prompted the consideration that the Rorschach sample could be significantly different from the larger MMPI-2 sample in terms of level of psychopathology, age or gender. Such potential differences between the samples might have accounted for the discrepant picture between the Rorschach and MMPI-2 findings. However, no differences were found by way of statistical analyses with regard to gender, age, and MMPI profile elevation between the sample of individuals whose Rorschach protocols were included in analysis and the sample of individuals whose protocols were excluded. According to Exner (1993), brief records are often given by highly resistive individuals who are attempting to avoid the demands of

the testing situation. Also, brief records can be reflective of an individual who follows the test instructions very concretely. In this study, the significant percentage of protocols with an $R < 14$ may reflect a unique characteristic of the population of individuals requesting SRS. It seems reasonable to speculate that SRS candidates will be somewhat resistant to an ambiguous test in the context of an exhaustive and stringent evaluation.

Another potential explanation for the divergent results which was considered is that one test may be less valid than the other. However, several meta-analytic studies (Atkinson, 1986; Parker, 1983; Parker et al., 1988) have shown that the Rorschach and MMPI have "acceptable and roughly equivalent psychometric properties when used in appropriate circumstances" (Parker et al., 1988, p. 372), circumstances in which hypotheses are supported by an empirical or theoretical rationale and in which powerful statistics are used. Thus, the results generated from the Rorschach and the MMPI are considered valid in this study precisely because the tests were used appropriately. First, the reliability of each test was demonstrated. Second, the study based its hypotheses on past empirical research. Third, this study did not hypothesize about any relationship between the two tests. And fourth, this study utilized powerful statistics.

A final, and more likely explanation for the bimodal picture is that divergent results may have been a reflection of the unique characteristics of each test. Several studies have shown a "weak or minimal interrelationship" between the MMPI and Rorschach (Archer & Krishnamurthy, 1993a, 1993b). Such findings suggest that each instrument may be measuring different aspects of personality functioning. According to Acklin (1993) "the Rorschach is best suited to elucidating personality organization and dynamics in contrast to the MMPI's focus on manifest symptoms and problems" (p. 128). The Rorschach has also been conceptualized as representing behavioral samples that capture the coping style of individuals in a problem-solving situation (Exner & Weiner, 1982), while the MMPI is conceptualized as a verbal, self-report instrument (Graham, 1990) which represents what individuals are willing or able to express to themselves and others. Factor analysis (Block,

1965; Welsh, 1956) of the MMPI has revealed that one dimension (A) reflects anxiety or general maladjustment while a second dimension (R) reflects a generalized inhibition about expressing psychopathology as well as lack of insight. The A factor has positive loadings on scales 7 and 8, and negative loadings on K. The R factor has positive loadings on scales 2, 3, 5, and 6, and a negative loading on scale 9. According to Weiner (1995), Rorschach data reflect different facets of personality functioning which include:

(a) how people attend to, perceive, and think about events in their lives; (b) how they experience and express affect; (c) what attitudes they hold toward themselves, others, and interpersonal relationships; and (d) the nature and adequacy of their preferred style of coping with life situations and managing stress (p. 330).

If each test validly reflects relatively nonoverlapping areas of psychopathology, then the bimodal picture should not be considered contradictory information. Each test is merely measuring different psychological phenomena. What would be invalid is to suggest that the MMPI and Rorschach are measuring the same phenomena. According to Weiner (1993), contradictions between the Rorschach and MMPI results are "generative and not invalidating" (p. 149). Thus, the use of the two instruments in combination helps to better assess the interrelationship between what individuals "say about themselves and how they actually perform" (Lovitt, 1993, p. 142).

Ultimately, the information obtained from the MMPI and Rorschach Test in this study has provided a more comprehensive, accurate and nuanced description of transsexuals. The MMPI results support the conclusion that a significant percentage of SRS candidates are psychologically normal and stable (apart from their gender identity disorder). They are likely capable of defending themselves against excessive and disabling emotional distress, and manifest an adequate level of social and occupational functioning. The Rorschach findings suggest that some SRS candidates may exhibit various personality features which are common with individuals with character disorders. The Rorschach findings also suggest that most SRS candidates do not exhibit psychotic thought processes. The results from both the MMPI and the Rorschach seem compatible with the

notion that transsexualism can be a discrete category of psychopathology which may or may not be associated with other forms of psychopathology. If transsexualism were a manifestation of another more severe underlying psychological condition, it is reasonable to expect that a greater percentage of individuals would have scored positively on the selected Rorschach variables and a greater percentage of individuals would have clinically elevated MMPI basic scales. The combined use of the MMPI and Rorschach on a sample of individuals who have successfully completed the criteria for approval for SRS has provided incremental information to the conclusions reached in this study.

CONTRIBUTIONS AND WEAKNESSES

This study has contributed to the literature on transsexualism and psychological assessment by following the recommendations of Rossi (1990) to increase statistical power (the probability of detecting a true difference between groups), and thereby allowing greater confidence to be placed on interpretations of significant and non-significant findings. The larger sample size used in the current investigation yielded power coefficient levels which approached or exceeded the "desirable minimum" of .80 suggested by Cohen (1988). This study also utilized psychometric tests with established reliability and validity. Further, this study attempted to control extraneous sources of variance by utilizing a well defined group of transsexuals and matched comparison groups. Finally, this study utilized multivariate analysis of variance in order to reduce alpha error related to the use of multiple tests. By following these recommendations, this study was able to obtain a level of statistical power well beyond the level obtained in past studies. Thus, the level of statistical power obtained in this study likely decreased both Type I and Type II error and allowed the data analysis to detect smaller effect sizes than previous studies.

This study also contributed significantly to the literature by offering an examination of both male and female transsexuals. The focus of past research has been skewed in the direction of male transsexuals, with only two studies (Lothstein, 1983; Roback et al., 1976a) having focused on female transsexuals. Thus, the general conclusions about

transsexualism derived by past researchers are heavily influenced by the clinical presentation of male transsexuals, possibly leading to a distorted picture of transsexualism. This study's incorporation of a large sample size with equal numbers of males and females provided a foundation from which to examine gender differences with greater precision and from which to generate more balanced and generalizable conclusions about transsexualism.

The major weakness of this study pertains to the issue of sample selection. First, this study restricted its examination to data obtained from transsexuals who were approved for sex reassignment surgery following successful completion of a rigorous screening procedure. The results of this study are thus considered representative of a highly select and narrowly defined group within the total population of individuals with gender dysphoria. As such, the results of this study are unlikely to reflect the complete range of psychopathology which may be present in the gender dysphoric population.

Second, this study obtained its psychological data on transsexuals from only two gender reassignment clinics within the same geographical area. Both clinics were associated with major medical centers and medical schools. It is likely that these clinics were rigorous in applying the criteria set forth by internationally acknowledged standards of care for transsexuals. However, the nature of the screening process and the rigor with which criteria are applied may not be consistent across clinics and individual private practitioners worldwide. A transsexual who is disqualified for surgery in one clinic, may eventually receive SRS if they are tenacious in their search and financially resourceful. Individuals can seek SRS in various regions of the United States, and it is not uncommon for individuals to seek treatment in Mexico, Belgium or other countries, some of which may employ differing (or reduced) standards for acceptance. Thus, inclusion of data from other clinics or private practitioners may have revealed a broader array of psychopathology associated with a transsexual sample than was found in this study.

Overall, the reliance on a highly select group of transsexuals and reliance on two highly similar clinics as sources of data limit this study's generalizability.

Third, in this study the designs of the MMPI and Rorschach analyses differed in terms of the selection of comparison groups. The design of the MMPI analysis employed randomly selected matched samples. The design of the Rorschach analysis relied upon previously published descriptive statistics of various samples. Weiner (1995) has cautioned against formal statistical comparisons of data from a delimited sample with Exner's normative data because Exner's nonpatient reference group is a larger more diverse group of people than samples used by individual investigators. However, he does acknowledge that such comparisons may be appropriate and of interest within limits. Although both tests are considered comparable in terms of validity, the results and associated interpretations derived from each test should not be given equal weight due to the differences in design with regard to comparison groups. The MMPI findings could be considered more definitive compared to the Rorschach findings. However, information derived from the Rorschach analyses may still be considered useful, suggestive and exploratory.

A discussion of this study's limitations provides fertile ground from which to make recommendations for future research. First, future studies should compare psychological test data obtained from transsexuals approved for surgery to psychological test data obtained from transsexuals who were rejected as candidates for surgery. Such studies would allow for observation of a much wider range of differences in the Gender dysphoric population. Second, future studies should compare test data obtained from various gender clinics worldwide. Such studies would allow assessment of the depth and consistency of screening for surgery between clinics. Third, future investigators should generate their own well matched comparison groups when investigating Rorschach protocols of individuals with a gender identity disorder. Such designs could increase confidence in conclusions derived from the data. Finally, and most importantly, future

researchers would benefit from a comparison of pre-surgical MMPI and Rorschach protocols of approved SRS candidates to post-surgical psychosocial outcome measures (i.e., Hunt & Hampson, 1980). Such an approach could assess the predictability of pre-surgical test results to successful post-surgical outcome, as well as provide a measure of treatment effectiveness for SRS procedures.

SUMMARY

Findings were discussed in terms of sample selection, self-presentation, validity, the interrelationship between psychological tests, power coefficients, and the opposing theoretical formulations of transsexualism. The findings from this study are considered compatible with non-conflictual theories of transsexualism and the notion that transsexualism can be independent of other underlying pathologies. These findings do not support the theory that transsexualism is necessarily the outcome of a severe, underlying pathological condition. The incremental validity from the use of an objective and a projective test, along with a sufficient level of statistical power, allows for greater confidence to be placed upon the conclusions reached in this study when compared to past research.

The somewhat discrepant picture of the transsexual sample obtained between the MMPI and Rorschach underscores the necessity and value of using both objective and projective techniques to evaluate candidates for SRS. The relatively normal presentation of the transsexual sample on the MMPI provides some evidence that gender reassignment clinics are effectively screening relatively stable individuals for surgery. The MMPI results also support the notion that there are individuals with gender identity disorder who are capable of facing the difficulties of SRS. Clinicians who rely upon the use of both the MMPI and the Rorschach in gender reassignment clinics should expect a more psychologically abnormal picture on the Rorschach. Clinicians should not consider the seemingly discrepant results as inconsistent. Rather, clinicians should acknowledge that both tests may be reflecting different aspects of personality functioning and

psychopathology. The results of one test do not necessarily invalidate the results of the other. The compilation of information from both tests can provide rich material from which to develop psychotherapeutic strategies for each individual.

The more deviant presentation of the transsexual sample on the Rorschach strongly urges clinicians to exercise extreme caution when evaluating individuals who request SRS, and underscores the necessity for the continued use of rigorous criteria by clinics for the ultimate approval of SRS.

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TABLES

Table 1

Mean T-Scores and Standard Deviations from the MMPI-2 Validity and Clinical Scale Profiles of the SRS Sample Derived from the Norms of the Biological Gender and the Desired Gender

Scale	Biological Gender (n = 112)		Desired Gender (n = 112)	
	M	SD	M	SD
L	57.69	9.43	57.64	9.39
E	52.92	8.97	52.68	8.36
K	52.63	9.97	52.59	10.07
1	48.46	10.33	48.44	10.97
2	53.70	12.59	53.37	12.67
3	51.09	11.01	51.19	11.25
4	54.93	10.60	54.96	10.65
5	70.15	10.76	50.58	12.53
6	52.34	11.62	52.15	11.40
7	49.57	10.99	49.62	11.20
8	50.72	9.52	50.73	9.49
9	50.42	9.47	50.45	9.59
0	50.68	9.66	50.41	9.53

Table 2

Mean T-Scores and Standard Deviations from the MMPI-2 Clinical and Validity Scales and Associated F Ratios for the SRS Candidate Group, the Psychiatric Group, and the Normative Group

Scale	SRS Candidate Group (n = 112)		Psychiatric Group (n = 112)		Normative Group (n = 112)		F(2, 336)
	M	SD	M	SD	M	SD	
L	57.69	9.43	57.79	11.97	49.54	8.06	25.19**c
E	52.92	8.97	63.28	15.24	50.97	11.47	33.73**b
K	52.63	9.97	47.53	11.30	49.03	10.54	6.81*a
1	48.46	10.34	65.74	16.58	48.15	8.68	74.40**b
2	53.70	12.59	65.55	16.39	49.17	10.15	46.06**d
3	51.09	11.01	59.64	14.86	48.54	10.61	25.26**b
4	54.93	10.60	73.05	13.87	50.54	9.63	120.29**d
5	70.15	10.76	51.53	9.42	48.55	9.46	157.14**a
6	52.34	11.62	65.27	13.68	49.83	8.69	58.95**b
7	49.57	10.99	75.22	20.05	51.03	10.42	110.31**b
8	50.72	9.52	73.36	16.99	50.22	10.14	121.01**b
9	50.42	9.47	60.02	13.55	52.40	11.06	21.63**b
0	50.68	9.66	55.27	12.43	49.29	9.22	9.96**b

*p < .01

**p < .001

a SRS Group significantly different

b Psychiatric Group significantly different

c Normative Group significantly different

d Significant differences between all groups

Table 3

Percentage of Individuals from the SRS Group, Psychiatric Group and Normative Group
Showing MMPI-2 Scale Elevations > 65 and Associated Chi-Square

Scale	SRS Group (n = 112)		Psychiatric Group (n = 112)		Normative Group (n = 112)		χ^2 (2,N = 336)
	#	%	#	%	#	%	
L	30	26.79	36	32.14	5	4.46	28.97**
F	9	8.04	50	44.64	14	12.50	52.54**
K	13	11.61	8	7.14	9	8.04	1.55
1	8	7.14	57	50.89	5	4.46	92.28**
2	14	12.50	49	43.75	8	7.14	52.54**
3	11	9.82	39	34.82	7	6.25	38.54**
4	19	16.96	77	68.75	9	8.04	112.04**
5	80	71.43	8	7.14	6	5.36	157.51**
6	13	11.61	51	45.54	3	2.68	71.74**
7	13	11.61	77	68.75	11	9.82	119.71**
8	11	9.82	75	66.96	10	8.93	121.36**
9	10	8.93	43	38.39	21	18.75	29.36**
0	9	8.04	24	21.43	7	6.25	14.70*

*p < .01

**p < .001

Table 4

Percentage of Individuals from the SRS Group and Psychiatric Group Showing MMPI-2**Scale Elevations > 65 and Associated Chi-Square**

Scale	SRS Group (n = 112)		Psychiatric Group (n = 112)		χ^2 (1, N = 224)
	#	%	#	%	
L	30	26.79	36	32.14	0.77
F	9	8.04	50	44.64	38.68**
K	13	11.61	8	7.14	1.31
1	8	7.14	57	50.89	52.04**
2	14	12.50	49	43.75	27.05**
3	11	9.82	39	34.82	20.19**
4	19	16.96	77	68.75	61.32**
5	80	71.43	8	7.14	97.03**
6	13	11.61	51	45.54	31.59**
7	13	11.61	77	68.75	76.08**
8	11	9.82	75	66.96	77.31**
9	10	8.93	43	38.39	26.92**
0	9	8.04	24	21.43	8.00*

*p < .01

**p < .001

Table 5

**Percentage of Individuals from the Psychiatric Group and Normative Group Showing
MMPI-2 Scale Elevations > 65 and Associated Chi-Square**

Scale	Psychiatric Group (n = 112)		Normative Group (n = 112)		χ^2 (1, N = 224)
	#	%	#	%	
L	36	32.14	5	4.46	28.69**
F	50	44.64	14	12.50	28.35**
K	8	7.14	9	8.04	0.06
1	57	50.89	5	4.46	60.30**
2	49	43.75	8	7.14	39.56**
3	39	34.82	7	6.25	28.01**
4	77	68.75	9	8.04	87.27**
5	8	7.14	6	5.36	0.30
6	51	45.54	3	2.68	56.22**
7	77	68.75	11	9.82	81.53**
8	75	66.96	10	8.93	80.10**
9	43	38.39	21	18.75	10.59*
0	24	21.43	7	6.25	10.82*

*p < .01

**p < .001

Table 6

Percentage of Individuals from the SRS Group and Normative Group Showing MMPI-2
Scale Elevations > 65 and Associated Chi-Square

Scale	SRS Group (n = 112)		Normative Group (n = 112)		χ^2 (1, N = 224)
	#	%	#	%	
L	30	26.79	5	4.46	21.16**
F	9	8.04	14	12.50	1.21
K	13	11.61	9	8.04	0.81
1	8	7.14	5	4.46	0.73
2	14	12.50	8	7.14	1.81
3	11	9.82	7	6.25	0.97
4	19	16.96	9	8.04	4.08
5	80	71.43	6	5.36	103.36**
6	13	11.61	3	2.68	6.73*
7	13	11.61	11	9.82	0.19
8	11	9.82	10	8.93	0.05
9	10	8.93	21	18.75	4.53
0	9	8.04	7	6.25	0.27

*p < .01

**p < .001

Table 7

Mean T-Scores and Standard Deviations from the MMPI-2 Clinical and Validity Scales for Biological Male and Biological Female SRS Candidates

Scale	Males (n = 56)		Females (n = 56)	
	M	SD	M	SD
L	57.46	8.42	57.91	10.42
E	54.29	10.38	51.55	7.13
K	52.14	10.05	53.12	9.95
1	49.03	9.94	47.89	10.77
2	56.18	12.00	51.23	12.78
3	52.20	10.28	49.98	11.69
4	54.87	10.47	54.98	10.84
5	68.37	8.37	71.93	12.54
6	55.00	11.69	49.68	11.02
7	50.70	10.17	48.45	11.73
8	49.79	9.05	51.05	9.91
9	49.79	9.05	51.05	9.91
0	48.52	9.09	52.84	9.81

Table 8

Percentage of Biological Male and Biological Female SRS Candidates Showing MMPI-2**Scale Elevations > 65**

Scale	Males (n = 56)		Females (n = 56)	
	#	%	#	%
L	14	25.00	16	28.57
E	3	5.36	6	10.71
K	8	14.29	5	8.93
1	4	7.14	4	7.14
2	8	14.29	6	10.71
3	4	7.14	7	12.50
4	8	14.29	11	19.64
5	38	67.86	42	75.00
6	6	10.71	7	12.50
7	6	10.71	7	12.50
8	4	7.14	7	12.50
9	3	5.36	7	12.50
0	3	5.36	6	10.71

Table 9

Mean T-scores and Standard Deviations from the MMPI-2 Validity and Clinical Scales for the Group of SRS Candidates with Rorschach Response Frequencies of 14 or More and the Group of SRS Candidates with Response Frequencies of 13 or Less

Scale	R ≥ 14 (n = 67)		R ≤ 13 (n = 45)	
	M	SD	M	SD
L	57.57	8.74	57.85	10.42
F	53.41	9.32	52.23	8.53
K	52.81	9.90	52.38	10.16
1	49.41	11.02	47.15	9.26
2	53.98	13.03	53.32	12.08
3	52.88	10.95	48.62	10.72
4	56.95	10.75	52.13	9.83
5	69.61	11.03	70.89	10.45
6	53.34	11.26	50.96	12.07
7	49.75	10.83	49.32	11.32
8	51.55	9.84	49.57	9.05
9	51.66	9.82	48.70	8.77
0	50.51	9.87	50.91	9.47

Table 10

Interscorer Agreement and Kappa Coefficients for the Major Categories and Associated Variables of the Rorschach Test

Category/Variable	Rate of Agreement	Kappa
Location	94.77%	.91
Developmental Quality	87.50%	.75
Determinants	82.08%	
F		.87
M		.80
FM		.83
m		.82
C'		.76
Y		.68
V		.66
T		.60
FD		.67
FC		.77
CF		.59
C		.68
Fr		.86
Form Quality	83.09%	.70
Pairs (2)	93.89%	.86

Table 10 (Continued)

Category/Variable	Rate of Agreement	Kappa
Contents	82.90%	
H		.88
(H)		.63
Hd		.77
(Hd)		.57
A		.94
(A)		.44
Ad		.90
An		.79
Art		.61
Ay		.33
Bl		1.00
Bt		.97
Cg		.91
Cl		.66
Ex		.66
Fi		.79
Fd		.66
Ge		.86
Hh		.69
Ls		.54

Table 10 (Continued)

Category/Variable	Rate of Agreement	Kappa
Na		.58
Sc/Id		.75
Sx		.89
Xy		1.00
Popular	93.60%	.84
Z Score	92.44%	.84
Special Scores		
(AG, MOR, COP, PER, PSV, AB)	88.00%	.63
(DV, INC, DR, FAB)	89.08%	.53

Table 11

Interscorer Agreement for the Variables Under Examination from the Rorschach Test

Variable	Rate of Agreement
D < 0	95.00%
Adj D < 0	90.00%
X+% < .70	85.00%
F+% < .70	70.00%
X-% > .15	85.00%
CF+C > FC+1	80.00%
Sum T = 0	90.00%
3r + (2) / R < .33	85.00%
Afr < .50	100.00%
MOR > 2	90.00%
Level 2 Sp.Sc. > 0	80.00%
H < 2	100.00%
Mp > Ma	100.00%
DEPI ≥ 5	85.00%

Table 12

Frequencies, Percentages, and Chi-Square Statistic of Selected Rorschach Variables for SRS Candidate Group, Exner's Nonpatient Adult Sample^a, Exner's Character Disorder Sample^a, and Exner's Inpatient Schizophrenic Sample^a

Variable	SRS (n = 67)		Nonpatient Adult (n = 700)		Character Disorder (n = 180)		Inpatient Schizophrenics (n = 320)		$\chi^2(3, N = 1267)$
	#	%	#	%	#	%	#	%	
D < 0	20	30%	89	13%	31	17%	69	22%	21.98*
Adj D < 0	16	24%	66	9%	27	15%	35	11%	15.46*
X+% < .70	54	81%	71	10%	147	82%	309	97%	816.51*
X-% > .15	46	69%	24	3%	121	67%	290	91%	823.55*
CF+C > FC+1	18	27%	30	4%	45	25%	81	25%	117.98*
Sum T = 0	50	75%	80	11%	130	72%	223	70%	473.19*
3r + (2) / R < .33	24	36%	112	16%	62	34%	112	35%	60.71*
Afr. < .50	25	37%	50	7%	94	52%	151	47%	277.70*
MOR > 2	5	8%	22	3%	31	17%	71	22%	98.66*
Lvl 2 > 0	10	15%	23	3%	62	34%	277	87%	743.31*
H < 2	18	27%	69	10%	91	51%	92	29%	158.35*
Mp > Ma	12	18%	72	10%	64	36%	111	35%	109.86*
DEPI \geq 5	7	11%	25	3%	24	13%	60	19%	65.55*

*p < .001

^a (Exner, 1993)

Table 13

Frequencies, Percentages, and Chi-Square Statistic of Selected Rorschach Variables for the SRS Sample and Exner's Nonpatient Adult Sample^a

Variable	SRS (n = 67)		Nonpatient Adult (n = 700)		$\chi^2(1, N = 767)$
	#	%	#	%	
D < 0	20	30%	89	13%	14.73**
Adj D < 0	16	24%	66	9%	13.38**
X+% < .70	54	81%	71	10%	222.48**
X-% > .15	46	69%	24	3%	313.95**
CF+C > FC+1	18	27%	30	4%	53.20**
Sum T = 0	50	75%	80	11%	173.41**
3r + (2) /R < .33	24	36%	112	16%	16.45**
Afr < .50	25	37%	50	7%	63.11**
MOR > 2	5	8%	22	3%	3.35
Lvl 2 > 0	10	15%	23	3%	20.15**
H < 2	18	27%	69	10%	17.58**
Mp > Ma	12	18%	72	10%	3.36
DEPI \geq 5	7	11%	25	3%	7.25*

*p < .01

**p < .001

^a (Exner, 1993)

Table 14

Frequencies, Percentages, and Chi-Square Statistic of Selected Rorschach Variables for the SRS Sample and Exner's Character Disorder Sample^a

Variable	SRS (n = 67)		Character Disorder (n = 180)		$\chi^2(1, N = 247)$
	#	%	#	%	
D < 0	20	30%	31	17%	4.98
Adj D < 0	16	24%	27	15%	2.68
X+% < .70	54	81%	147	82%	0.03
X-% > .15	46	69%	121	67%	0.04
CF+C > FC+1	18	27%	45	25%	0.10
Sum T = 0	50	75%	130	72%	0.14
3r + (2) / R < .33	24	36%	62	34%	0.04
Afr < .50	25	37%	94	52%	4.35
MOR > 2	5	8%	31	17%	3.74
Lvl 2 > 0	10	15%	62	34%	9.00*
H < 2	18	27%	91	51%	11.12**
Mp > Ma	12	18%	64	36%	7.13*
DEPI ≥ 5	7	11%	24	13%	0.37

*p < .01

**p < .001

^a (Exner, 1993)

Table 15

Frequencies, Percentages, and Chi-Square Statistic of Selected Rorschach Variables for the SRS Sample and Exner's Inpatient Psychiatric Sample^a

Variable	SRS (n = 67)		Inpatient Schizophrenics (n = 180)		$\chi^2(1, N = 387)$
	#	%	#	%	
D < 0	20	30%	69	22%	2.17
Adj D < 0	16	24%	35	11%	8.10*
X+% < .70	54	81%	309	97%	24.22**
X-% > .15	46	69%	290	91%	23.36**
CF+C > FC+1	18	27%	81	25%	0.06
Sum T = 0	50	75%	223	70%	0.65
3r + (2) / R < .33	24	36%	112	35%	0.02
Afr < .50	25	37%	151	47%	2.18
MOR > 2	5	8%	71	22%	7.62*
Lvl 2 > 0	10	15%	277	87%	148.38**
H < 2	18	27%	92	29%	0.10
Mp > Ma	12	18%	111	35%	7.18*
DEPI ≥ 5	7	11%	60	19%	2.66

*p < .01

**p < .001

^a (Exner, 1993)

Table 16

Power Coefficients^a for the Chi-Square Analysis of the MMPI-2 Basic Scales Examining the Relationship Between the SRS and Normative Samples and the Relationship Between the SRS and Psychiatric Samples

Variable	SRS and Normative Samples		SRS and Psychiatric Samples	
	Power (1 - β)	β	Power (1 - β)	β
L	0.98	0.02**	0.04	0.96
E	0.07	0.93	1.00	0.00**
K	0.05	0.95	0.08	0.92
1	0.04	0.96	1.00	0.00**
2	0.11	0.89	1.00	0.00**
3	0.06	0.94	0.98	0.02**
4	0.29	0.71	1.00	0.00**
5	1.00	0.00**	1.00	0.00**
6	0.52	0.00*	1.00	0.00**
7	0.02	0.98	1.00	0.00**
8	0.01	0.99	1.00	0.00**
9	0.33	0.67	1.00	0.00**
0	0.07	0.93	0.60	0.40*

^a Based on a two-tailed test at alpha level of .01

*Significant relationship at $p < .01$

**Significant relationship at $p < .001$

Table 17

Power Coefficients^a for the Chi-Square Analysis of the Rorschach Variables Examining the Relationship Between the SRS and Nonpatient Adults Samples, the Relationship Between the SRS and Character Disorder Samples, and the Relationship between the SRS and Inpatient Schizophrenic Sample

Variable	SRS and Nonpatient Adults		SRS and Character Disorder		SRS and Inpatient Schizophrenics	
	Power (1 - β)	β	Power (1 - β)	β	Power (1 - β)	β
D < 0	0.75	0.25**	0.33	0.67	0.10	0.90
Adj D < 0	0.72	0.28**	0.16	0.84	0.43	0.57*
X+% < .70	1.00	0.00**	0.01	0.99	0.85	0.15**
X-% < .70	1.00	0.00**	0.01	0.99	0.91	0.09**
CF+C > FC+1	0.99	0.01**	0.01	0.99	0.01	0.99
Sum T = 0	1.00	0.00**	0.02	0.98	0.04	0.96
3r + (2) / R < .33	0.85	0.15**	0.01	0.99	0.01	0.99
Afr < .50	1.00	0.00**	0.32	0.68	0.12	0.88
MOR > 2	0.19	0.81	0.25	0.75	0.57	0.43*
Lvl 2 > 0	0.76	0.24**	0.70	0.30*	1.00	0.00**
H < 2	0.81	0.19**	0.81	0.19**	0.01	0.99
Mp > Ma	0.22	0.78	0.60	0.40*	0.55	0.45*
DEPI \geq 5	0.45	0.55*	0.02	0.98	0.15	0.85

^a Based on a two-tailed test at alpha level of .01

*Significant relationship at $p < .01$

**Significant relationship at $p < .001$.

FIGURES

Figure 1. Mean MMPI-2 T-score profiles of the SRS candidate sample based on the norms of the biological gender and the norms of the desired gender.

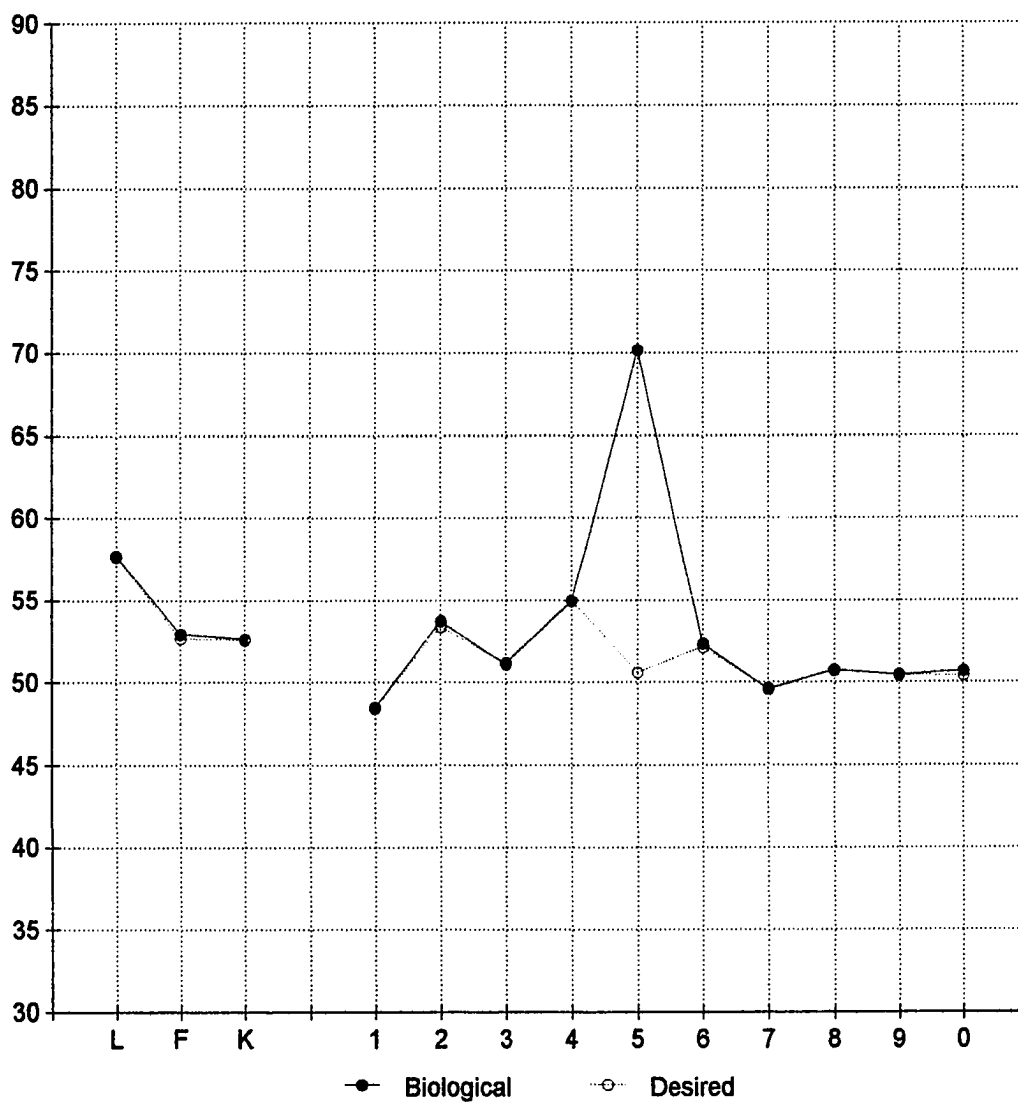


Figure 2. Mean MMPI-2 T-score profiles for the SRS candidate sample, the psychiatric sample and the normative sample.

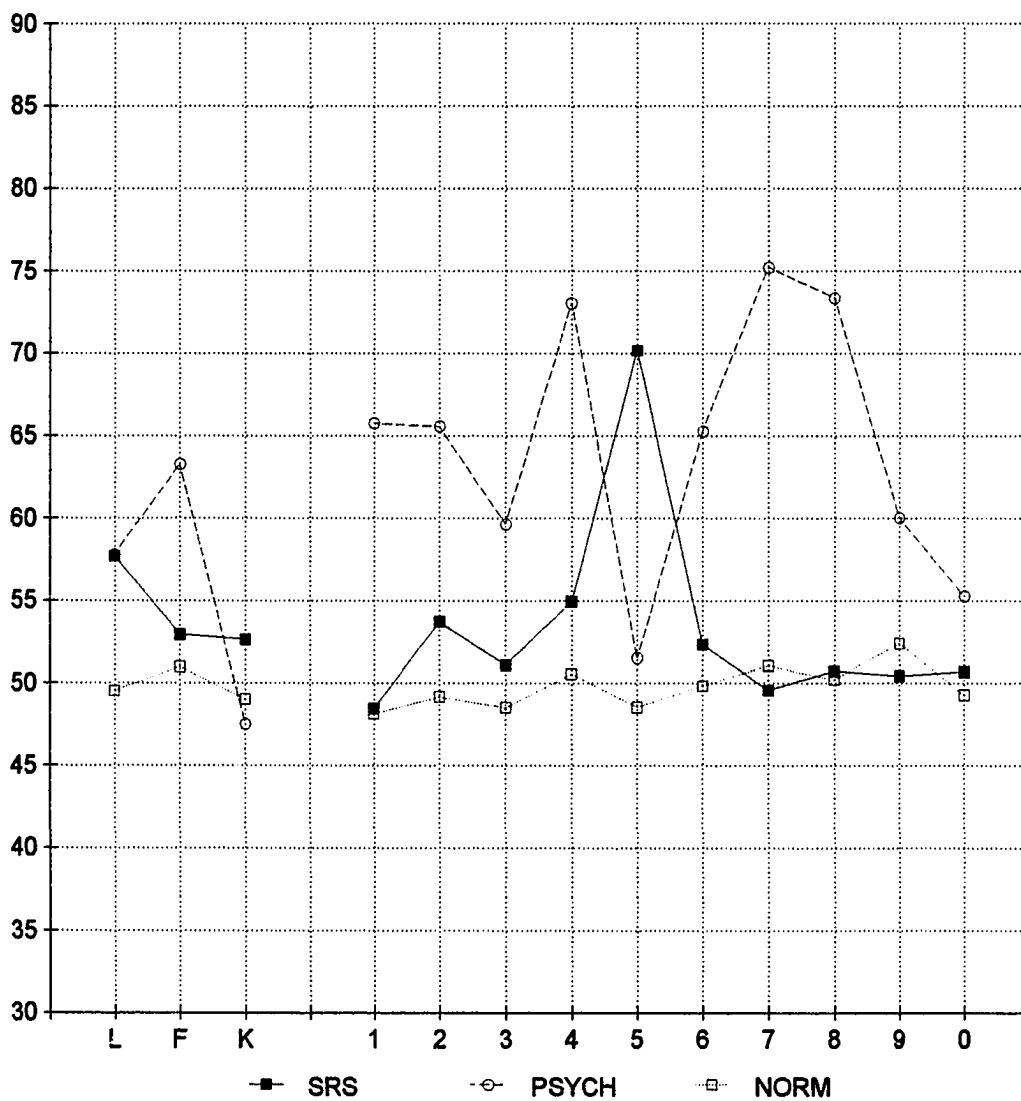


Figure 3. Percentage of individuals from each sample producing clinical elevations (T-score ≥ 65) on one or more, two or more, and three or more clinical scales.

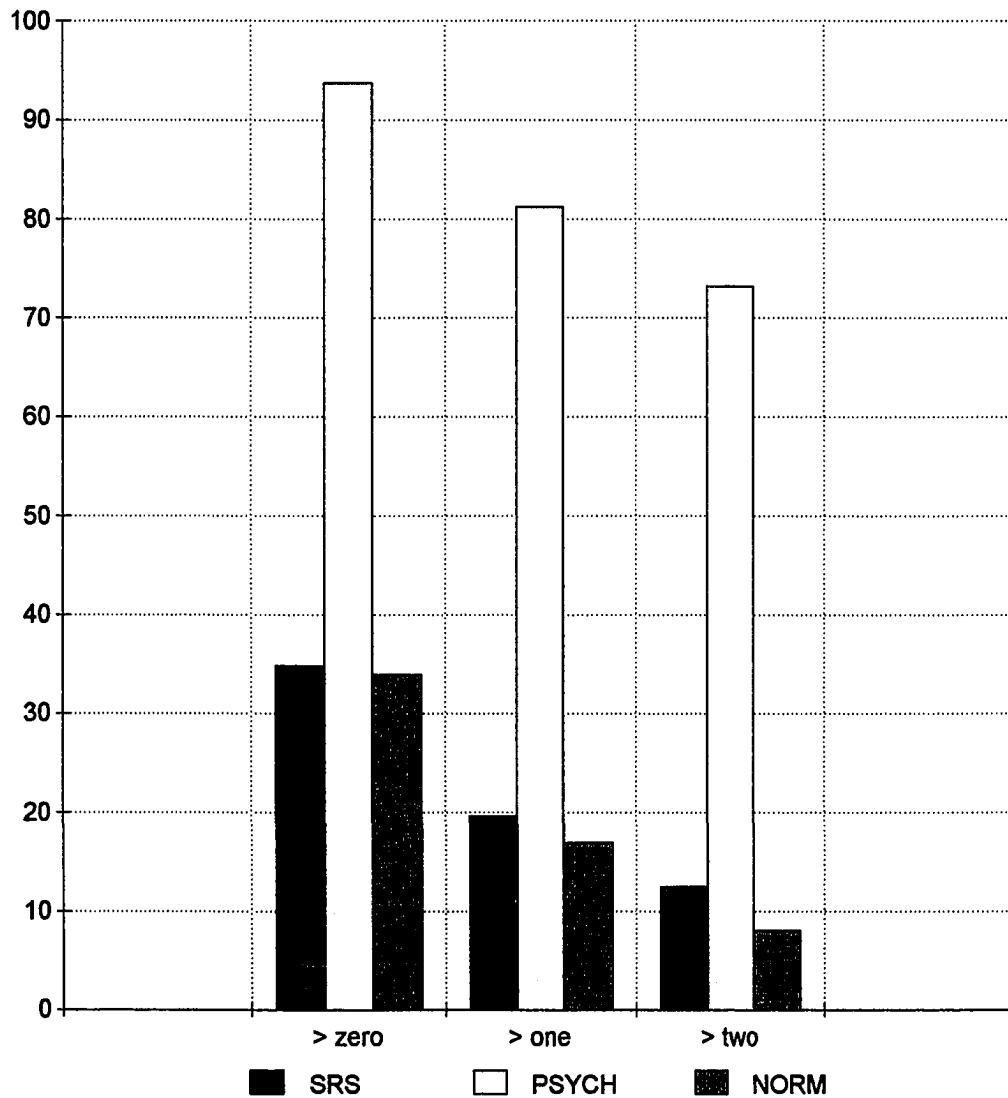


Figure 4. Mean MMPI-2 T-score profiles for biological males and females from the SRS candidate sample.

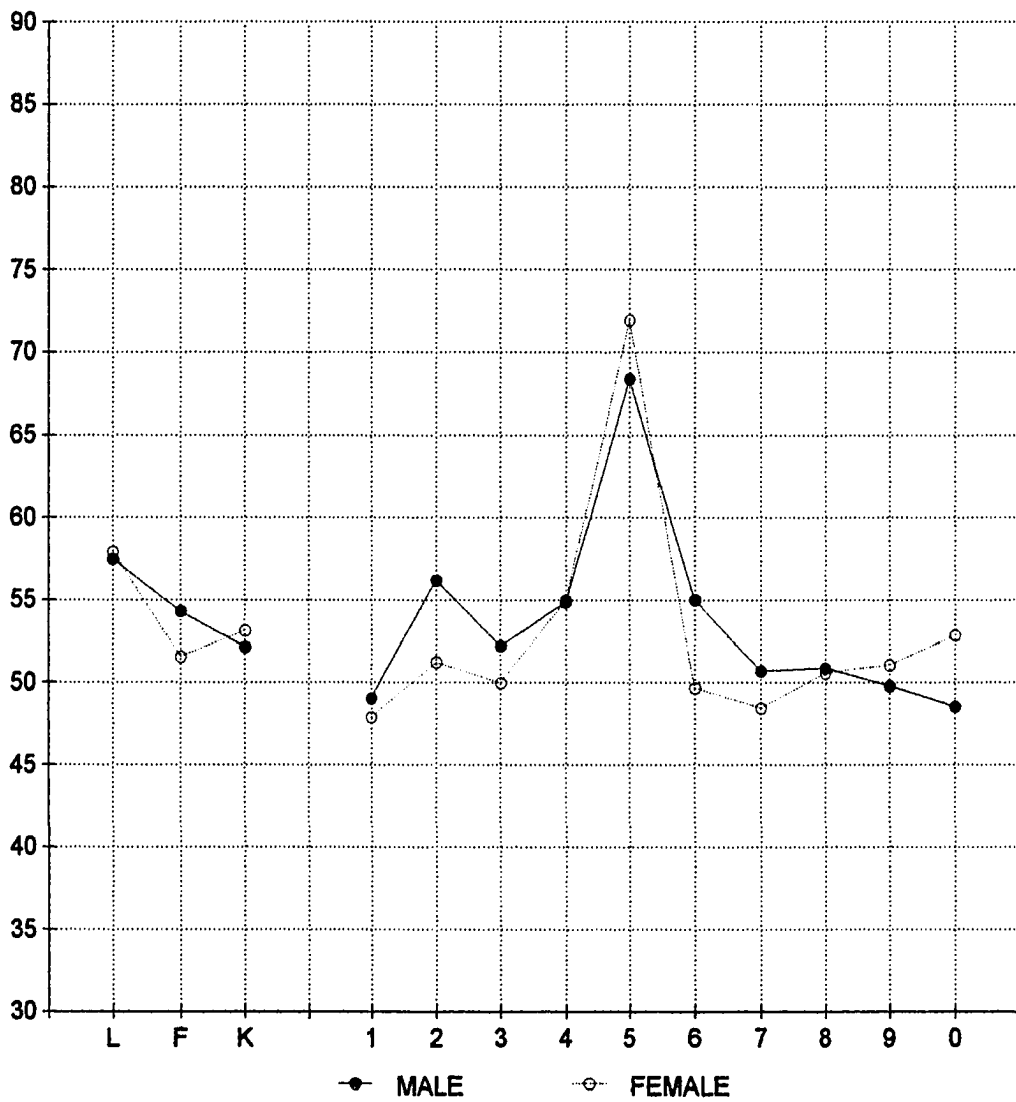
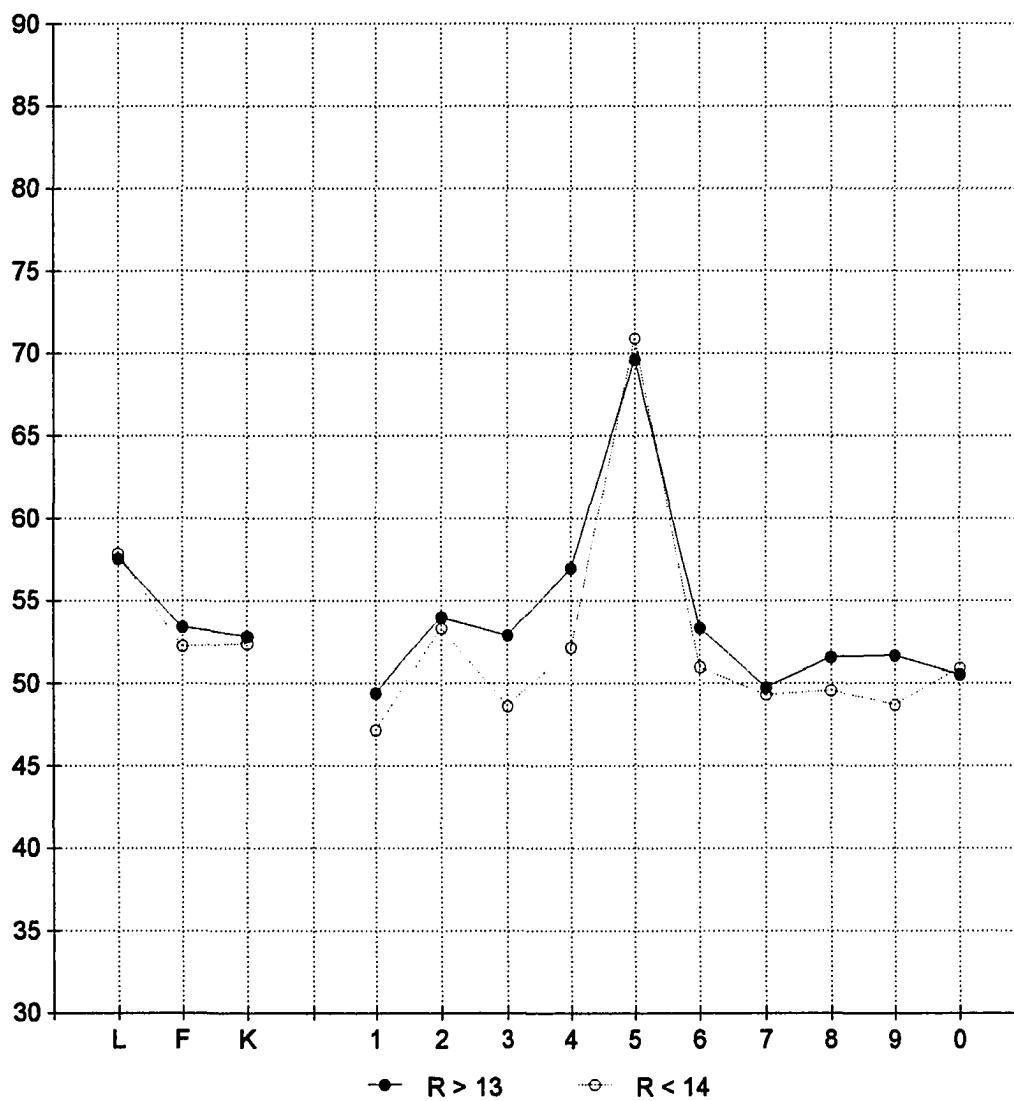


Figure 5. Mean MMPI-2 profiles for the group of SRS candidates with Rorschach response frequencies of 14 or more and the group with response frequencies of 13 or less.



APPENDICES

Appendix A

Diagnostic Criteria for Gender Identity Disorder

- A. A strong and persistent cross-gender identification (not merely a desire for any perceived cultural advantages of being the other sex).

In children, the disturbance is manifested by four (or more) of the following:

- (1) repeatedly stated desire to be, or insistence that he or she is, the other sex
- (2) in boys, preference for cross-dressing or simulating female attire; in girls, insistence on wearing only stereotypical masculine clothing
- (3) strong and persistent preferences for cross-sex roles in make-believe play or persistent fantasies of being the other sex
- (4) intense desire to participate in the stereotypical games and pastimes of the other sex
- (5) strong preference for playmates of the other sex

In adolescents and adults, the disturbance is manifested by symptoms such as a stated desire to be the sex, frequent passing as the other sex, desire to live or be treated as the other sex, or the conviction that he or she has the typical feelings and reactions of the other sex.

- B. Persistent discomfort with his or her sex or sense of inappropriateness in the gender role of that sex.

In children, the disturbance is manifested by any of the following: in boys, assertion that his penis or testes are disgusting or will disappear or assertion that it would be better not to have a penis, or aversion toward rough-and-tumble play and rejection or male stereotypical toys, games, and activities; in girls, rejection of urinating in a sitting position, assertion that she has or will grow a penis, or assertion that she does not want to grow breasts or menstruate, or marked aversion toward normative feminine clothing.

In adolescents and adults, the disturbance is manifested by symptoms such as preoccupation with getting rid of primary and secondary sex characteristics (e.g., request for hormones, surgery, or other procedures to physically alter sexual characteristics to simulate the other sex) or belief that he or she was born the wrong sex.

- C. The disturbance is not concurrent with a physical intersex condition.

- D. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Appendix A (Continued)

Code based on current age:

302.60 Gender Identity Disorder in Children

302.85 Gender Identity Disorder in Adolescents or Adults

Specify if (for sexually mature individuals):

Sexually Attracted to Males

Sexually Attracted to Females

Sexually Attracted to Both

Sexually Attracted to Neither

SOURCE: DSM-IV, American Psychiatric Association, 1994.

Appendix B

Differential Diagnosis of Gender Dysphoria

Primary and secondary transsexualism
Transvestism with depression or regression
Schizophrenia with gender identity disturbance
Effeminate homosexuality with adjustment disorder
Homophobic homosexuality
Career female impersonators
Borderline personality disorder with severe gender identity issues
Body dysmorphic disorder
Gender identity disorder, nontranssexual type
Atypical gender identity disorder
Ambiguous gender identity adaptation
Malingering

SOURCE: Brown, 1990.

Appendix C

Standards of Care: Explication

- 5.1. Prior to the initiation of hormonal sex reassignment:
 - 5.1.1. The patient must demonstrate that the sense of discomfort with self and the urge to rid the self of the genitalia and the wish to live in the genetically other sex role have existed for at least 2 years.
 - 5.1.2. The patient must be known to a clinical behavioral scientist for at least 3 months, and that clinical behavioral scientist must endorse the patient's request for hormone therapy.
 - 5.1.3. Prospective patients should receive a complete physical examination which includes, but is not limited to, the measurement of SGPT in persons to receive testosterone and the measurement of SGPT, bilirubin, triglycerides, and fasting glucose in persons to receive estrogens.
- 5.2. Prior to the initiation of genital or breast sex reassignment (penectomy, orchidectomy, castration, vaginoplasty, mastectomy, hysterectomy, oophorectomy, salpingectomy, vaginectomy, phalloplasty, reduction mammoplasty, breast amputation):
 - 5.2.1. See 5.1.1 above.
 - 5.2.2. The patient must be known to a clinical behavioral scientist for at least 6 months, and that clinical behavioral scientist must endorse that patient's request for genital surgical sex reassignment.
 - 5.2.3. The patient must be evaluated at least once by a clinical behavioral scientist other than the clinical behavioral scientist specified in 5.2.2. above, and that second clinical behavioral scientist must endorse the patient's request for genital surgical sex reassignment. At least one of the clinical behavioral scientists making the recommendation for genital sex reassignment must be a doctoral level clinical behavioral scientist.
 - 5.2.4. The patient must have been successfully living in the genetically other sex role for at least one year.
 - 5.2.5. A urological examination should be performed.
- 5.3. During and after services are provided:
 - 5.3.1. The patient's right to privacy should be honored.
 - 5.3.2. The patient must be charged only appropriate fees, and these fees may be levied in advance of services.

SOURCE: Walker et al., 1985.

Appendix D

Referral Criteria for Surgery

Patients Who Generally Should Not Be Referred for Surgery

- The suicidal patient
- The manipulative-demanding patient
- The sexual offender
- The patient under 21
- The schizophrenic patient
- The mentally retarded patient
- The patient whose parent has just died
- The patient who has little preparation for sex change
- The patient who has not lived in the opposite role for at least 1 year
- The patient who genitally mutilates him/herself
- The patient who has experienced identifiable major losses
- The patient who enjoys his/her genitals during sex
- The patient who is under pressure from a partner to change sex
- The psychotic patient
- The patient with AIDS
- The impulsive-psychopathic patient
- The seriously medically ill patient
- The regressed patient
- The patient whose partner has just abandoned him or her
- The patient with a long history of severe mental illness
- The patient who impulsively demands surgery
- The patient who has transvestic fetishism
- The patient with a substance abuse disorder
- The patient with no identifiable occupation or means of support
- The patient who has no identifiable support system and inadequate coping skills

Appendix D (Continued)**Patients Who May Be Considered For SRS**

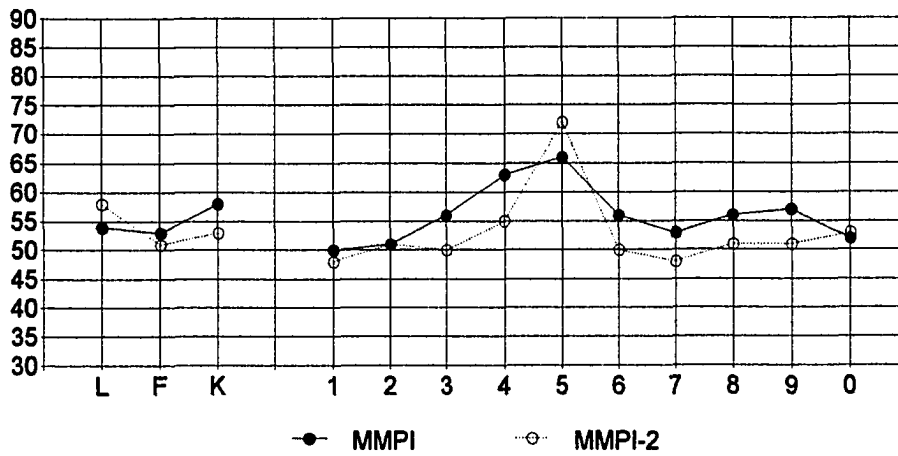
Has lived and worked in a cross gender role for 1 to 2 years
Inability to adapt and live in biologically congruent gender role
Has good coping skills and a viable support system
Able to establish a relationship with a psychotherapist
Passes effortlessly and convincingly in society
Has a stable job
Life-long cross-gender identification
Other diagnoses are ruled out
Unmarried, or legally divorced
Evidence some social-emotional stability
Has been medically supervised on hormones for one year
Does not exhibit any traits found in previous list

SOURCE: Lothstein & Brown, 1993.

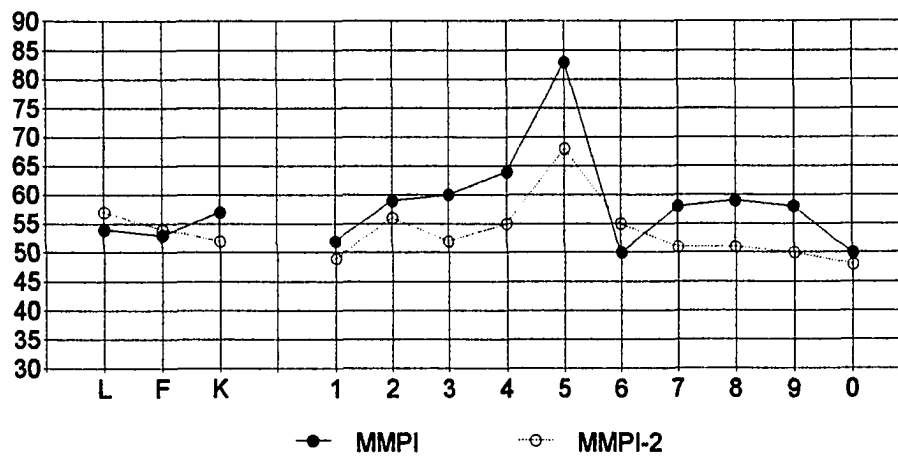
Appendix E

Original MMPI Mean T-Score Profiles with Corresponding MMPI-2 Profiles for
the SRS Candidate Sample

BIOLOGICAL FEMALES



BIOLOGICAL MALES



AUTOBIOGRAPHICAL STATEMENT

Gregory R. Caron was born on November 23rd, 1957 in Columbus, Georgia. He was raised in Auburn, Maine and graduated from Edward Little High School in 1976. He received his Bachelor's of Music in Piano Performance in June 1980 from the Sherwood School of Music, Chicago, Illinois. Immediately following his undergraduate work, he became a member of the Paulist Fathers, a religious order of catholic priests. During his time with the Paulists, he received a Master's of Divinity in Theology from the Catholic University of America in Washington D.C. in December of 1984. Mr. Caron also holds a Master's of Science in General Psychology from Old Dominion University, Norfolk, Virginia, which he obtained in August of 1991. Prior to his involvement in clinical psychology, Mr. Caron's professional experience has included positions as a high school teacher and as director of music for various churches in the Washington, D.C. and Tidewater areas.

Mr. Caron began the Psy.D. program at the Virginia Consortium for Professional Psychology in August of 1991. While in the program, his practicum assignments have included Portsmouth Naval Hospital, Eastern State Hospital, Veterans Administration Medical Center, and the Counseling Center of the College of William and Mary. He Joined the U.S. Navy in August of 1994 and participated in their clinical psychology internship program from September 1994 to September 1995. He has been recently assigned as a clinical psychologist to the Naval Hospital for the Naval Air Station at Patuxent River, Maryland.

Mr. Caron has been married for nine years to Mary Welton Caron. They have one son, Matthew, who is six years of age.