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HUMAN SEXUALITY:

Research and Treatment Frontiers

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HUMAN SEXUALITY: RESEARCH AND TREATMENT FRONTIERS

Introduction

The multifaceted nature of human sexuality imparts a wide array of research and treatment frontiers. During the past decade changes have been brought about by social experimentation and social evolution, developments in laboratory hardware, and the application of sophisticated research methods to sexual behavior. Human sexuality, in attitude and action, has undergone extensive change and has dated much previous psychiatric knowledge. Change continues. This chapter will attempt to capture the dawn on the research and treatment horizon.

Developmental Strategies

Gonadal Hormones: Prenatal Influences on Behavior

Is behavior influenced by sex steroids *in utero*? As the fetus is exposed to gonadal hormones derived from its own and maternal organs and as its central nervous system undergoes rapid growth and development, it is reasonable to ask whether levels of these steroids influence later behavior. As sexually dimorphic kinds of behavior have been clearly documented in many species, inquiry has been directed toward the possible relation between prenatal levels of androgens and estrogens and those kinds of postnatal behavior.

Young male and female rhesus monkeys behave differently, with males showing more chasing, aggressive, and rough-and-tumble play. Prenatal androgen levels have been shown to influence these activities. Female rhesus monkeys exposed to large amounts of testosterone *in utero* behave more like young male monkeys than do untreated young females (they become “tomboy” monkeys). Postnatal androgen exposure does not have a comparable effect.

A human analogy exists. Females with the adrenogenital syndrome, in which excessive prenatal adrenal androgen is produced, have also been reported to differ from typical girls, behaviorally as well as anatomically.

When compared to their non-adrenogenital-syndrome sisters, these androgen-exposed girls are less often described as interested in doll play, playing with infants, and wearing dresses, and more often described as tomboys. A third study also showed a trend (not statistically significant) for adrenogenital girls to be described as tomboys, compared with a non-sibling control group.

What of human males prenatally exposed to unusually large amounts of estrogen? For about two decades diabetic pregnant women have been administered estrogen and progesterone at Boston's Joslin Clinic. Sixteen-year-old and six-year-old males who were products of these pregnancies have been compared with same-aged males of nontreated, nondiabetic mothers. The male offspring of female hormone treated mothers were reported as less rough-and-tumble, aggressive, and athletic. However, one important uncontrolled factor in the study was the influence of the experimental group mothers' chronic illness on their son's behavior (rather than hormone exposure per se).

These studies suggest that just as anatomic dimorphism is influenced by androgenic hormone (androgen induces maleness; no gonadal hormone is needed for femaleness), so too may dimorphic behavior be influenced. Here, rough-and-tumble, physically aggressive play may be affected. In cultures that label such behavior masculine or feminine (as does our own) this influence

could significantly affect psychosexual development. Peer-group socialization may be modified with a low level of aggressivity resulting in a boy's accommodating more easily to the activities and companionship of girls. "Boys play too rough!" is the typical cry of the behaviorally feminine boy, described later. Similarly, mother-son and father-son interaction may be modified, with a low level aggressive boy relating more easily to the domestic activities of his mother and avoiding the sports activities of his father.

A significant obstacle in studying the effects of steroid hormones on the developing behavioral system is assessment of the prenatal hormonal milieu. While some preliminary techniques are available, validity and feasibility are problematic. Strategies include repeated samplings of maternal plasma and urine during gestation, plus amniocenteses. Questions that remain are the degree to which any of these indirect approaches to the fetal milieu in fact reflect the fetal milieu, identification of critical gestational periods and whether the tissues of some individuals are more or less responsive to the same level of hormone. Should valid measures become attainable, then a series of longitudinal studies is possible, assessing high and low androgen- and estrogen-exposed children, of *both sexes*, on dimensions of neonatal and subsequent sex-typed behavior.

Neonatal Sex Differences

Studies of the human neonate hold promise of isolating the early roots of “innate,” male-female dimorphism. Several sex differences have been reported, some replicated, others not, and most are difficult to interpret. They group into displays of greater muscle strength, sensory differences, and the degree of affiliative behavior to adults.

Newborn males are more able to lift their head from a prone position. Mothers have been observed to stretch the limbs of their three-week-old boys more readily than those of their same-aged girls, but more often to imitate sounds made by the girls. Mothers have been observed to hold their five-month-old daughters more than their sons, and, at thirteen months, these same daughters are more reluctant to move away from their mothers. The same thirteen-month-old children also show a different play style with toys and react differently to a barrier placed between themselves and the toys: boys tend to hurl toys about, girls tend to gather them together; boys more often crawl to the barrier’s end (in an attempt to get around it) girls more often sit where placed and cry.

In an elegant research design, differential mother-attachment behavior by *opposite-sexed co-twins* was demonstrated. Female co-twins looked at, vocalized to, and maintained proximity to their mothers more than did their brothers.

Other differences during the newborn period have been reported, sometimes of an obscure nature. Neonatal females increase their formula intake when a sweetener is added; boys do not. At three months, females can be conditioned to an auditory reward while boys respond to a visual one. At six months, girls show cardiac deceleration (a measure of attention) while listening to modern jazz, whereas boys decelerate to an interrupted tone.

While sex differences on these several parameters are reported, intra-sex differences exist, as well as considerable intersex overlap. Many measures have a bell-shaped distribution. Males and females who fall at the ends of the distribution could be longitudinally studied to determine correlations between neonatal behavior and developmental attributes. Of interest would be those infants whose physiologic patterns fall within the zone typically found for the other sex. For example, will males with a female pattern of taste preference or within the female range for elevating the prone head show later childhood behavior that is culturally feminine, e.g., preferring doll play to rough-and-tumble play?

Studying neonatal activity levels and responsivity to holding (cuddliness) also offers research promise. During the first year, children differ considerably regarding physical activity and their response to holding. These “temperamental” features influence parental perception of the child, parental attitudes toward the child, and affect the degree to which the child is

held (notably by the mother). Mothers of the feminine boys described later typically describe their sons as having been the cuddliest of their children and Stoller theorizes that excessive maternal holding promotes feminine identity in a young male. Objective measures of these variables can be developed. For example, children could be placed in the nucleus of a series of concentric circles and their movement measured, during a standard time period, from the starting place across these lines. Nonparent males and females (“unbiased” raters) could pick up infants (prior to the development of stranger anxiety) and the degree of clingingness or withdrawal noted.

Again, it is expected that measures of activity level and response to holding would scatter across a bell-shaped curve. Males and females at both ends of the curve could then be longitudinally followed, and correlations made between these variables and later behavior, including rough-and-tumble play, and activity and toy preferences. The degree to which these variables could be correlated with prenatal hormone levels would depend on the extent to which the latter become measurable.

Intersexed (pseudohermaphroditic) infants could provide an intriguing research model here. If one or another of the above sex differences is replicated in normal infants (e.g., taste preference), would anatomically intersexed babies (e.g., adrenogenital females, or XXY males) be behaviorally intersexed?

Anatomically Intersexed Children

Studies with pseudohermaphrodites have demonstrated the extensive influence of early experiential factors on psychosexual development and bear significant treatment implications. Consider two gonadal and chromosomal females with ambiguous (masculinized) genitalia, appearing similarly intersexed at birth (the virilizing adrenogenital syndrome). One is neonatally designated female by the attending physician; the other is designated male. Each will typically develop a sexual identity consistent with the sex assigned at birth and consequent rearing experiences. In the latter case, the person, though possessing ovaries and the 44 + XX female-chromosomal configuration, will have a male identity. This will manifest as typical masculinity and erotic attraction toward females. Environmental influences appear to have overruled whatever innate biological influences existed.

These “experiments of nature” have told us more. Sexual identity is set early in childhood. The evidence is from cases in which subsequent sex reassignment has been attempted when an “error” in the original sex designation is discovered. For example, if the person described above, assigned to male status, had been unambiguously raised as a male, an attempt at reassignment after about the fourth birthday would typically be unsuccessful.

Some of these data, now nearly two decades old, have been the subject

of criticism. Exceptions to the early critical-period concept of sexual identity have been collated and alternative interpretations of the clinical data presented. These latter writers either point to a few cases in which sex reassignment was apparently effected without significant psychological hardship after life's first years, or they reinterpret the establishment of sexual identity as due to prenatal neuroendocrine input, rather than postnatal socialization.

Problems have existed in evaluating many of the case reports of the anatomically inter-sexed. One has been the degree to which they are representative of the intersexed population, or represent a bias in the direction of "successful" or "unsuccessful" adjustment to either initial sex assignment or later reassignment. Also missing from many case studies is a detailed documentation of early socialization experiences. The full range of parental attitudes toward the intersexed status of the infant, the message(s) transmitted by physicians to parents during the earliest years, and the peer-group experiences of the child are rarely described.

Most recently, Lev-Ran, a Soviet investigator now emigrated to Israel, has reported a series of intersexed patients supporting the classic thesis of Money, the Hampsons, and Stoller. Money et al. had stressed the importance of genital appearance as a contributing factor to the socialization experience of the intersexed child. This feature, if in conflict with assigned sex, might

cause some intersexed children to question their sex of assignment. The recent Lev-Ran report is unique in that cases are described in which sexual identity is consonant with sex of assignment in spite of dramatic genital incongruity. One example is an adult female with the adrenogenital syndrome, feminine and heterosexual, whose clitoris measuring 9 cm. stands as the only significant obstacle to her participation in heterosexual intercourse, and another is a masculine boy with a 1.5 cm. penis.

Management of anatomically intersexed infants remains somewhat controversial. Although there are some “chromosomal fatalists” who assert that genetic sex determines male or female identity and that the roots of biological sex will invade contrary postnatal rearing, the consensus is that sex assignment should be dictated by genital appearance and potential genital functioning. Construction of a cosmetically and physiologically acceptable penis has not been perfected; development of a cosmetically and physiologically acceptable vagina has. Thus, a chromosomal, gonadal male, born with a micro- or absent penis, or who has lost his penis at age one or two years via trauma, should be raised as a female. This will avoid the lifelong distress of being a penis-less male, and will permit functioning as a sexual person with an acceptable body image. The chromosomal, gonadal female with a markedly enlarged clitoris or an atretic vagina should be raised as a female, with appropriate repair of the genitals. Decisions regarding other states, e.g., a chromosomal, gonadal male, with third-degree hypospadias and

bilateral cryptorchidism, would depend on the degree to which surgical constructive repair of the genitalia is possible. Sexual identity will typically follow the sex of assignment if parents are convinced of the wisdom of that assignment and raise their child accordingly.

It is important and helpful for parents of the anatomically intersexed to know the evidence behind the assertion that postnatal socialization is the chief determinant of human sexual identity. Additionally, a helpful analogy is that of language acquisition. Humans are born with the capacity to learn a language—which one is learned depends on the early environment. Humans are also born with the capacity for psychosexual differentiation (learning a male or female identity). As with language, which one is learned depends on the early environment. (Details of patient management have been fully described by Money.)

One argument against using the anatomically intersexed as a model for *normal* psycho-sexual differentiation is that by virtue of their anomaly the gonadal hormonal milieu bathing their prenatal central nervous system has been atypical. Therefore, they may be more behaviorally “plastic” than normal children. However, an intriguing “experiment” is under way to test this criticism. A set of male monozygotic twins is currently being raised by their parents in opposite sex roles. Circumcision accident caused the penis of one genetic male co-twin to slough, and the child has been reassigned, female,

to be raised as a girl. In this case, the prenatal hormonal milieu plus genetic factors are held relatively constant, with postnatal socialization being the significant variable." Additionally, our own research has uncovered two sets of monozygotic twins, one male set and one female, discordant for sexual identity. One twin pair consists of ten-year-old males, one of whom is very feminine and wants to become a girl. His brother is unremarkably masculine. The second twin pair consists of a twenty-five-year-old female graduate student who desperately wants sex-change surgery and her feminine college graduate sister. Different early life socialization experiences are reported for both twin pairs.

An increased incidence of cross-sexed behavior (typically transvestism and transsexualism) in males with sex chromosome anomalies has been suggested. Most typically, these are males with an extra X chromosome. However, there is difficulty in evaluating a causal relation between anomalies of sex chromosomes and sexual identity due to the possibility of sample bias. Those patients with both anomalies are more likely to be reported. Whether the concordance between the two variables is higher than would be expected by chance is unclear, since while the incidence of sex chromosome aneuploidy is known, that of transvestism and transsexualism is not.

The incidence of the XXY chromosomal anomaly is 1 in every 700 males. Thus, a large number of such infants can be detected at birth with buccal

smear or karyotyping procedures. These children could then be longitudinally assessed, hormonally and behaviorally. Coupled with detailed analyses of parental attitudes toward varieties of childhood play and other early socialization experiences, a complex developmental study becomes possible that could weigh the several variables of psychosexual development. At least one such study is currently underway. However, future court decisions may block large-scale karyotyping procedures as a violation of the subject's rights (recently a screening for XYY boys was blocked). Secondly, dissecting the influence of the microscopic, longitudinal study process from the child's "natural" sexual identity development is problematic.

Atypical Sex-Role Behavior in Anatomically Normal Children

Studies of transsexuals, persons who want to change sex, reveal that there are anatomically normal adults with an intense, irreversible, inner conviction of belonging to the other sex who trace the onset of this cross-sex identity to childhood. Invariably, these persons, recalling their childhood, report having role played as persons of the other sex, having dressed as children of the other sex, having preferred opposite-sexed children as playmates, and having avoided the toys and games typical of their sex.

Studies of transvestites, males who cross-dress with accompanying sexual arousal, also demonstrate the early life onset of atypical sexuality.

Approximately half of five hundred transvestites in one series reported commencing cross-dressing prior to adolescence.

Studies of homosexuals, persons whose primary sexual commitments are to partners of the same sex, again point to the enduring significance of childhood gender-role behavior. One study reported that about a third of one hundred homosexual adult male patients recalled playing predominantly with girls during boyhood (compared to 10 percent of the heterosexual control group) and 83 percent displayed an aversion to competitive group games (compared to 37 percent of the heterosexuals.). Another study of a nonpatient homosexual sample reported that two-thirds of eighty-nine males recalled "girl-like" behavior during childhood (compared to only 3 percent of the heterosexual controls). For female homosexuals, over two-thirds of a group of fifty-seven were tomboyish during childhood (compared to 16 percent of the heterosexuals) with half of them persisting with tomboyism into adolescence (compared to none of the heterosexuals).

What emerges from these retrospective studies is the fact that atypical sex-role behavior during childhood may persist as atypical sex-role behavior during adulthood. However, retrospective studies pose significant research obstacles. Objective indices of the child's behavior are not obtained and recollections of interpersonal experiences, notably those with parental figures, are distorted by the passage of time. Objective measures of parent-

parent and parent-child behavior at the time when atypical behavior is emerging are not possible.

My own research design, initiated with John Money and continued with Robert Stoller, has been to generate a sample of young children behaving in a manner similar to that reported by adults with an atypical sexual identity. We have studied sixty-five anatomically normal boys, aged four to ten, who prefer the dress, toys, activities, and companionship of girls, role play typically as females, display feminine mannerisms, and may state their wish to be girls. These boys have undergone extensive psychological testing, behavioral observation, and interviewing. Their parents have been interviewed with structured formats, alone and together, and have also undergone psychological testing.

An attempt is being made to match each feminine boy with a same-aged child who is masculine, has the same configuration of younger and older siblings, and is from a family with a similar socioeconomic, ethnic, and marital background. To date fifty-five of the feminine-boy families have been matched. Detailed, behavioral descriptions of the feminine boys and their parents, plus preliminary testing data, are reported in *Sexual Identity Conflict in Children and Adults*.

The boys test similarly to girls of the same age on a variety of

psychological procedures and are significantly different from most same-aged boys. When they construct fantasies, they generally utilize female family figures and an infant (as do girls, whereas boys utilize male figures and pay less attention to an infant). When they are requested to draw a person, the figure drawn is usually female (girls do the same, most boys draw a male). Alone in a playroom, they play mostly with a “Barbie” doll (as do girls, while other boys play with a truck). On the It Scale for Children (in which a neuter figure “It” selects a variety of sex-typed preferences illustrated on cards), their selection of toys, playmates, and articles are the same as girls and differ from most boys. When they complete card sequences in which a child of their own sex joins a parent engaged in a sex-typed activity, they join the female parent in a feminine activity (as do girls, but not most boys). A preliminary series of possible variables associated with this atypical development has been formulated:

1. An innate low level of aggressivity.
2. Parental indifference to or encouragement of culturally feminine behavior in a boy during his first years.
3. Maternal inhibition of boyish or rough-and-tumble play during the first years.
4. Cross-dressing of a young boy by a female.
5. Extraordinary maternal attention to and physical contact with a

young male resulting in a lack of psychological separation between the two.

6. Absence of an older male identity model during a boy's first years, or paternal rejection during this period.
7. Physical beauty in a boy of sufficient degree that adults treat him in a culturally feminine manner.
8. Absence of male playmates during a boy's initial years of socialization.
9. Strong maternal dominance of a family.

A preliminary synthesis of how these variables may operate in a composite child is sequentially conceptualized as follows: A mother considers her male infant unusually attractive. She finds him to be extremely cuddly. She devotes considerable attention to this boy. Her other children are adequately separated in age so they do not infringe on this child's early mothering experience. Her other commitments are few for channeling feelings of caring and love. The child, beginning to explore the environment for playthings, finds the many colorful accessories belonging to his mother and initiates play with these objects (shoes, jewelry, and cosmetics). He imitates mother, the person with whom he is in primary contact. These kinds of behavior are considered cute, and the child receives additional attention and supportive laughter. The father is a much less significant person in the

boy's life, and interacts minimally with him. His possessions and accessories are less attractive as early play objects. The father, too, may view his son's early play with feminine objects as funny or cute, or else ignores it. As peer relationships begin for the boy, girls are mostly available. Boys, if available, are more aggressive than he is, frighten him, and perhaps meet with parental disapproval. The child says boys are "too rough" and prefers girls. The father having anticipated a period when the boy would be amenable to father-son, roughhouse play, instead finds his son to have minimal interest in such activity. The boy is in tune with the domestic activities of his mother, and the father, experiencing this as rejection, dubs his son a "mamma's boy." The boy, aware of his father's demands and disapproval, moves further toward the accepting reactions of his mother. During the early school years his prior socialization in feminine skills poses an additional obstacle to same-sex peer integration. Accustomed to female playmates, he does not relate easily to males. In consequence of his culturally feminine interests and greater comfort with a female peer group, he is teased by boys, driving him further from the male group. The mother continues to respond positively to his interest in cross-dressing or improvising feminine costumes. She interprets boyish and girlish behavior during this life period as having no relation to later masculinity or femininity. The boy continues to show little interest in his father's activities. Emotional distance between the father and son escalates. The boy's increasing identification with females is revealed by a feminine

affectation. This increases social stigmatization and the child is labeled “sissy.”

Treatment of the Atypical Child

Intervention into the behavior of very feminine boys engages both research and ethical issues. First, some research questions. What do we know about the natural course of untreated boyhood femininity? What might intervention, of various types at various ages, do?

Follow-up studies tell us something of the “natural course” of boyhood femininity. Twenty-seven adult males previously seen clinically for boyhood femininity have been reevaluated. Fifteen are currently transsexual, transvestic, or homosexual." The degree of treatment intervention with most of these patients is not clear. By contrast, the adult transsexuals, transvestites, and homosexuals in the series noted earlier were rarely evaluated during childhood.

Consider next “sexual identity.” While complex, for the purpose of this discussion it can be viewed as including three components: (1) earliest: a person’s self-awareness of being male or female—core-morphologic identity; (2) later: manifestations of culturally defined masculine and feminine behavior; and (3) still later: partner preferences for genital sexuality.

All three components of sexual identity are atypical for transsexuals (they consider themselves female, behave like women, and are attracted to anatomically same-sexed partners). Transsexuals report that their parents felt their atypical behavior was insignificant and would pass, and so they were not treated; sexual identity remained completely atypical. Although the feminine boys seen by Money and myself initially behaved in a way similar to that reported by many transsexuals, they did undergo evaluation and are not now transsexual. For example, at five, one boy prayed nightly to be changed into a girl and was repeatedly cross-dressing. His parents brought him for evaluation at seven. Today he does not want to be a woman, does not cross-dress, but is homosexual. Why did the first two components of sexual identity (core-morphologic identity and gender-role behavior) undergo change, and the third component, genital sexuality, remain atypical?

We can speculate. Core-morphologic identity appears to be crystallized during the first three years of life. While it continues to be significantly overlaid during the ensuing three years (and, to a degree, throughout life) a considerable portion of sexual identity has been set by the time the atypical child is initially evaluated. Gender-role behavior, a later identity component, may be more modifiable during childhood. Thus, one outcome of early intervention may be that a young male who feels he is or wants to be a female may be convinced that the change is not possible. Additionally, a sufficient number of nonrough-and-tumble activities may be found, along with

nonrough-and-tumble male playmates, to promote comfort in anatomic maleness. If so, sufficient behavioral change will ensue so that the tortuous search for later sex change is averted. However, attention is not specifically addressed to the third component, genital sexuality, because such behavior is not manifested during these years.

The critical factor with respect to whether behavior of an atypical boy changes may be whether the parents seek evaluation. Those parents who request evaluation are initiating a new milieu for their son, one that discourages and rejects feminine gender-role behavior. By so doing, the second component of sexual identity, and perhaps indirectly the first component, may undergo change. If such is the case, the pre-transsexual male may mature into a homosexual male. The degree to which the first two components influence the third component is not clear.

The effect of same-aged, peer group relations during grade school years is coming under more study. While it apparently has great import, the relationship between early peer group interaction and later genital sexuality is enigmatic. One possibility is that the feminine boy's lack of positive affective responses from males during earlier years (peer group and father) results in "male affect starvation," which is compensated for in adulthood in male-male romantic relationships. Another possibility is that the young male with a female peer group is socialized in that group to the point of evolving

similar, later romantic interests (attachments to males). The manner in which preadolescent, *homosocial* peer group relationships typically evolve into adolescent and adult *heterosexual* relationships and *heterosocial* peer group relationships into *homosexual* ones is an intriguing, little understood facet of psychosexual development. Obviously, this active period, the “latency years,” deserves closer scrutiny.

Ethics of Treatment

Should clinicians attempt to modify the behavior of the child whose sexual identity is dramatically atypical? The very feminine male child experiences considerable social conflict in consequence of his behavior. He is teased, ostracized, and bullied. The masculine girl is not stigmatized. Parents who bring their very feminine boy for professional consultation are concerned about his behavior and want something done. Parents do not bring their masculine girls for consultation unless the behavior is dramatically atypical. What, then, is the professional’s responsibility toward the parents of the very feminine boy and their child?

It can be argued that the conflict experienced by the feminine boy is derived mainly from the culture in which he lives, a culture that dictates, for irrational reasons, that boys and girls behave in specified dimorphic ways. Many parents are attempting to raise their children in a less traditionally

stereotyped manner, giving boys and girls a wider range of behavioral options. However, to a major degree this ethic has yet to engage the general population and great differences still exist for boys and girls in dress, toy, and game preferences. Other children continue to label feminine boys “sissy.” Unless the entire society undergoes dramatic change during the next few years, the psychic distress and alienation experienced by the very feminine boy will augment during his teens. While the clinician may prefer that the whole society immediately change, there is more basis for optimism in helping a single individual to change.

But what kind of change? Treatment need not forge the feminine boy into an unduly aggressive, insensitive male. However, treatment can impart greater balance to a child’s interests and behavior where previously skewed patterns have precluded comfortable social integration. For example, consider the exclusively female peer group of the feminine boy. Opponents of intervention argue that there is nothing wrong with a boy playing with girls. Advocates of limited intervention argue that there is nothing wrong with playing with boys. They observe that the very feminine boy is eliminated from interaction with one-half of the potential peer group (as is the traditionally masculine boy, but without consequent teasing). Intervention may help the feminine boy find unstigmatized boys, who prefer “sex-role-neutral” activities so as to widen his range of social interactions.

Do therapists reinforce societal sexism by treating the feminine boy? To a degree, yes. What are the alternatives? An attempt could be made to modify the attitudes of the peer group, so that teasing stops and the feminine boy is effectively integrated into the group. However, to rapidly change the pediatric society is clearly a formidable task. On the other hand, helping the boy cope with teasing can constitute part of the intervention program.

Clearly, the issue is not simple. The standard of many clinicians is to be nonjudgmental, with goals to be dictated by the patient. If (1) parents want their child to be happier, (2) the child is in serious conflict, and (3) the likelihood of reducing that conflict is greatest by some behavioral change, is it ethical to refuse intervention? More extended discussion of this dilemma is found in Green.

Children of the Sexually Atypical

Homosexual Parents

Contemporary social experiments may provide new information on psychosexual development. These involve children whose parents live an atypical sexual life style.

While the majority of divorcing mothers seek and find a new husband (and the majority of fathers seek and find a new wife) some enter into

homosexual relationships. “Lesbian mothers” have received increasing attention in the press and in courts of law. Some female homosexual mothers are being challenged for child custody by former husbands with the contention that lesbianism signifies an unfit mothering status. At least one homosexual male father has been judged as not providing a suitable environment for overnight visits by his children.

What is the effect on children of being raised by one or two homosexual adults? Issues engaged include the significance for psychosexual development of having both sex-role models for parents during childhood and teens, the availability of both sex-role models in families in which parents of only one sex are represented, the effect on a child of recognizing that a parent is homosexual, the effect on a child of peer group reactions to a child’s atypical household, and the influence of the attitude of the other (non-homosexual) biological parent.

Role models of the other sex are not excluded from the lives of children who live in homosexual-parent households. Children are repeatedly exposed to heterosexual adults of both sexes in the persons of relatives, parents of the peer group, and at school. Additionally, the conventional nuclear-family model of mother, father, and children depicted on television, in books, and in moving pictures repeatedly bombards a child.

The effect on a child's later sexual preferences of knowing that at least one parent is homosexual is not fully determined. This will depend, in part, on the extent to which partner preference is a result of role modeling. Role modeling cannot account for the entire process of psychosexual development however, in that the vast majority of homosexuals were raised by heterosexual parents.

The view held by the homosexual parent, or couple, of persons of the other sex may be significant. The image painted of these absentee figures can be influential in shaping later affectional elements.

Yet another issue is a possible biological predisposition to homosexuality, perhaps inherited, such as atypical gonadal hormone levels. Should such a basis be firmly demonstrated (see below) it is questionable whether raising a child so predisposed in either a homosexual or a heterosexual household would significantly affect future sexuality.

Transsexual Parents

Boys and girls may be raised by a parent (in either the mother or father role) who has undergone sex-change surgery. In some families, females married to men who were formerly women have become pregnant via donor insemination, and the couple then raises the child. In other instances, transsexual couples are raising a child who is a product of the wife's former

marriage. And, in a recent court case, a chromosomal female who had previously borne a child and was currently living as a man, was granted authority to raise the child in the role of father.

These “social experiments” permit the testing of various assumptions regarding parental role modeling and identification. The long-term evaluation of such children is a study in which several standard components of the typical child-raising experience are altered.

The Homosexual’s Parents

The parents of homosexuals have typically been “studied” by indirect means. Adults have been asked to recall traits of mother and father during the respondent’s childhood. These methods are compromised by the inaccuracy of recalled experiences with conscious or unconscious distortions diluting their validity. A major study utilizing this approach was that of Bieber and his psychoanalytic colleagues who were treating 100 homosexual males. Their conclusion was that the close-binding, intimate mother and the passive, distant, hostile, perhaps absent father contributed to the homosexual partner preference.

Several efforts at replicating the Bieber finding have been attempted. Evans confirmed this pattern using a nonclinical sample, but Greenblatt found that the fathers of male homosexuals were described as generous, pleasant,

and dominant and the mothers as neither overprotective nor dominant. A third study with a large number of subjects, 307 male homosexuals and 138 male heterosexuals, utilized several psychometric instruments to retrospectively assess parental characteristics. For the entire subject sample the finding that homosexuals more often recall their fathers as rejecting and distant was confirmed. However, mothers were not more often described as protective, demanding, close, or dominant. Furthermore, reports of relative father-versus-mother dominance did not discriminate the two groups. Of considerable significance is the finding that when only those homosexuals and heterosexuals scoring low on neuroticism measures are compared, the differences in parental backgrounds between the groups *disappears*. Thus, it may be that the tendency for individuals, especially homosexuals in therapy, to report more rejecting fathers may be related more to the reporter's level of neuroticism than to sexual orientation per se.

Homosexuality and Gonadal Hormones

Following an era in which a hormonal basis of atypical sexual behavior in the human fell into disrepute, a revival of interest now exists. The introduction of exquisitely sensitive hormonal assays has opened a new era of investigation. Where previous studies utilizing gross, nonspecific measures failed to show differences between homosexuals and heterosexuals, several recent studies have found differences.

In 1970, the ratio of two stereoisomeric urinary metabolites of testosterone, androsterone, and etiocholanolone were found to discriminate twenty adult male heterosexuals from twenty male homosexuals. However, three severely depressed heterosexuals and one diabetic heterosexual also had ratios like that of the homosexuals. During the same year Loraine and co-workers reported four homosexual females with higher urinary androgen and lower estrogen levels than four heterosexual females, and two homosexual males with lower androgen levels than controls. Then, in 1971, Kolodny and co-workers reported that thirty male homosexuals had significantly lower plasma testosterone levels than fifty male heterosexuals.

Questions of specificity abound. Rigorous attention has not been paid to possibly confounding variables, especially stress, drug intake, and recency of sexual activity. Heterosexual males under military stress also have testosterone levels lowered to the same degree as those reported for homosexuals. Homosexuals, because of their stigmatized life style, may be under greater stress than heterosexuals. In the Kolodny et al. study, data on marijuana ingestion are given for the homosexual subjects, but not for the heterosexuals. This drug appears to reduce plasma testosterone (also Kolodny et al.). Beyond this, three subsequent studies have failed to find differences in testosterone levels," and a fourth found homosexuals to have higher levels. Data are not given in the last study for sexual activity prior to plasma sampling. Sexual activity can influence plasma testosterone.' Finally,

another study, while not noting a testosterone difference, did find an elevation of estradiol in homosexual males. The only finding so far to survive replication is the androsterone-etiocholanolone study, which has been repeated by the original investigator and also by an independent researcher. The relevancy of this finding remains obscure.

Two investigations have indirectly looked at the hypothalamic-pituitary axis of males with a same-sexed partner preference to see whether it follows a female-type gonadotropin release pattern. Two male-female differences have been studied. The first is the well documented tonic release pattern in the male and the cyclic pattern in the female. The second is the less extensively studied gonadotropin feedback response resulting from an intravenous estrogen load (decrease followed by rebound above baseline in the female, decrease followed by return to normal in the male).

Male-to-female transsexuals (who have a male partner preference) were studied to determine whether their gonadotropin release pattern was tonic (male) or cyclic (female). It was tonic. Male homosexuals and heterosexuals were given intravenous estrogen. The homosexuals' gonadotropin response showed a reduction, followed by a rise above baseline (female pattern). The heterosexuals' response showed no positive rebound after the initial reduction (male pattern—Dorner et al). This provocative finding has yet to be replicated.

Bisexuality

Bisexuality (also called ambisexuality) is a term with many usages. It may imply an isolated or occasional sexual experience with one sex and most relations with the other sex. It has been used to imply innate sexual features of all persons or a “latent” impulse seething to find outlet. Usage here is narrowly restricted to those persons who would rate “3” on the 7-point Kinsey scale, with 0 designating exclusive heterosexuality and 6 exclusive homosexuality. Individuals who are equally disposed in fantasy and overt behavior to males and females are not common.

True bisexuality raises a number of theoretical and research questions. Explaining homosexuality as an anxiety or phobic reaction to one genital configuration (typically the male reacting to the “castrated” female) meets with difficulty in understanding the individual capable of sexual satisfaction with both males and females. If future research documents that specific developmental routes, be they social or biological, promote either an exclusive male or female sexual partner preference, would bisexuals fall in the middle range on these attributes? Finally, will the changes in early childhood socialization that less clearly demarcate children’s sex roles promote more bisexuality during adult years?

The bisexual population has been largely ignored until recently (Blumstein and Schwartz.) It offers considerable promise in understanding

the full potential of human sexual response in males and females.

Clinical Management Strategies: Adulthood

Treatment of Sexual Dysfunction

A new era in sexual health has been opened by the pioneering research and treatment of Masters and Johnson.' "Sexual dysfunction" has been introduced into the medical vocabulary. This term is shorthand for a variety of sexual difficulties, most commonly erectile failure and premature ejaculation in the male and painful intercourse or non-orgasmia in the female. The great success of the Masters and Johnson treatment program has resulted in a rash of centers conducting "Masters and Johnson" therapy. Conspicuously absent from these economically successful enterprises, however, has been sophisticated evaluation of their efficacy.

Treating sexual dysfunction is more complex than training a male for greater ejaculatory control or a female for orgasmic response. The complexity is underscored by Fordney-Settlage who characterizes factors behind the problems of the individual or sexual couple. Problems may engage: (1) deficient sexual information; (2) restrictive sexual attitudes; (3) deficient or negative sexual experience; (4) inadequate sexual communication; (5) regressive sexual communication or behavior; (6) deficient or damaged individual self-concept; (7) individual intrapsychic factors; (8) nonsexual interpersonal distress; and (9) destructive reaction patterns. It is unlikely that any simple, inflexible intervention can address itself to this multiplicity of

problems.

Research designs are needed in which groups begin therapy on an equal basis, all input to the patient(s) during the treatment period, except for the specific intervention modality are held constant, objective indices are given for pre- and post-intervention behavior, and finally, long-term follow-up results are reported. Nontreatment control groups are also needed (waiting list) to accommodate the high degree of motivation brought by these patients to the treatment situation.

Which components of these programs are associated with symptom reversal in the several styles of sexual dysfunction must be ascertained.

Evaluating outcome as “successful” or “unsuccessful” is not simple. A couple may find the dysfunctional symptom removed but additional interpersonal problems to be of such magnitude that they separate or divorce. Or, symptom reversal may manifest itself only in sexual interactions with other partners. Treatment-outcome measures need to consider several dimensions, not merely presence or absence of specific symptoms. Whether a couple graduates from a dysfunction program “*magna cum loudly*” may not be the most important variable.

In the absence of specific dysfunctions, but “merely” general *sexual malaise*, valid behavioral criteria are needed. A step in this direction is the

inventory developed by LoPiccolo and Steger. This self-report cites seventeen kinds of sexual behavior, and for each kind both partners rate the activity as it applies to their relationship. Indices are obtained of satisfaction with the frequency and range of the couple's sexual behavior, as well as knowledge of the partner's sexual preferences. The inventory has been shown, in a preliminary study, to have good reliability, to be capable of separating sexually dysfunctional and functional couples, and to record changes associated with treatment.

Quality control and licensing of "sex clinics" is necessary to avoid exploitation and insure that responsible, effective intervention is being provided. Additionally, treatment programs are typically expensive and may not be covered by health insurance, thus rendering them unresponsive to the health needs of many people. Perhaps inexpensive, self-help materials can be developed on audio- and video-tape cassettes, providing effective home education and treatment.

The use of erotic materials and surrogate partners are controversial elements in some sexual dysfunction programs. Does viewing explicit sexual materials benefit an individual's sexual competence? Preliminary data were published in 1970 by the Commission on Obscenity and Pornography. Questionnaires were given to patrons of "adult" film theaters. Based on responses of the one third who returned the forms (questionably

representative, but real people nevertheless) 54 percent experienced sex as “more enjoyable since viewing sex films” and only 1 percent reported a negative effect. Seventy-nine percent reported that the films motivated them to introduce new variety into their sexual behavior, variety within the range of typical sexuality. While many people treat themselves with erotica, from adolescence through later years, learning and role rehearsing various sorts of sexual behavior and generally enriching their erotic fantasy, this sexual-health view of erotica is not shared by law-enforcement officials who typically see erotica as sowing the seeds of moral decay. Surrogate sexual partners are discussed below in a section on the treatment of homosexuality but that discussion has parallel applicability here.

Two additional subjects merit note: pheromones and biofeedback. Pheromones are odoriferous substances that act as chemical messengers between individuals. The possibility exists that sex pheromones may operate in the human primate. Unquestionably, they operate in the nonhuman primate. In the rhesus monkey, a vaginally secreted short-chain aliphatic acid dramatically activates male sexual interest.' Should such a human pheromone be isolated, it may be harnessed by enterprising therapists in the treatment of sexual dysfunction. A biofeedback design is briefly mentioned in the following section.

Male-Female Differences in Patterns of Erotic Arousal

The Kinsey et al. data suggested that males and females respond differently to potentially erotic stimuli. Females were described as not responding to visual sexual materials while males clearly did. Now, two decades later, other studies have revealed no sex difference in responsiveness to visual materials, with both males and females reporting sexual arousal. Another previously reported sex difference concerned the degree of romantic content in the materials: females were reported to be more responsive to romantic narrative imagery and males to stories with an emphasis on “impersonal, mechanical” sex. Again, more recent research has found no sex difference. These studies have relied on verbally reported sexual arousal as experienced by genital sensation and coital activity before and after exposure to erotica. No physiologic measures of arousal were obtained.

In an effort to explain the differences in response patterns noted by the Institute for Sex Research in the U.S. in the 1940s (Kinsey) and the Institute for Sex Research in West Germany in the 1970s (Schmidt, Sigusch), Gebhard has suggested that the wording of the Kinsey interview may have yielded an artifactual sex difference. To elicit a positive reply re erotica in the earlier studies, a strong genital response was necessary, or else the respondent was likely to reply negatively to the particular stimulus modality. Gebhard also reasons that females respond more gradually to erotic stimuli so that questions such as, “Do you become aroused if shown a photograph of coital activity?” would elicit a negative reply from women.

Until recently, research on the responsivity of females to potentially erotic stimuli relied on verbal reports. While male responsivity had been measured via penile plethysmography, in which penile volume change is recorded by a strain-gauge mercury loop, no reliable device had been developed to provide an objective measure of female response. In 1970, Cohen and Shapiro described a device for measuring changes in vaginal blood flow via two thermistors that recorded temperature changes, and in 1971 Jovanovic noted a device designed to measure vaginal contractions via an intravaginal balloon, with another designed to record clitoral erections via a thermistor.

In 1974, Sintchak and Geer described an easily inserted, intravaginal photoplethysmograph that measured vaginal blood volume and vaginal pressure pulse. These measures have been demonstrated to change in response to viewing erotic materials or listening to erotic recordings, but not to change in response to non-erotic stimuli. Thus, the possibility exists of more sophisticated studies of the effects of various types of stimuli on both males and females. Also open to study are attempts to correlate arousal patterns with personality features . and prior sexual experiences.

Penile and vaginal plethysmography may find applicability in the treatment of sexual dysfunction. Objective indices of arousal to specific stimuli can be recorded and feedback provided to the subject. Biofeedback

designs in which subjects are rewarded for increments in sexual arousal may enable a subject to enhance sexual responsivity—of obvious value in the treatment of male impotence and female non-orgasmia.

Nonpatient Homosexuals

Clinicians have largely ignored the questionable validity of generalizing from a psychiatric patient sample of homosexuals to the entire homosexual population. Early researchers to focus on this fallacy were Hooker and Marmor.

The homosexual life style has been traditionally viewed within a psycho-developmental framework as *sine qua non* of mental disorder, or *prima facie* evidence of unresolved oedipal conflict, residual castration fear, and psychologic immaturity. Forearmed with this rationale, the life dilemmas bringing forth the homosexual patient have been construed as supportive of this mental-illness position. An alternative interpretation is that those homosexuals consulting psychiatrists have difficulties represented by only a minority of the homosexual population, that the difficulties experienced (maintaining stable object relations, anxiety, depression) are also found in the heterosexual-patient population, and that those homosexuals in conflict, or desirous of heterosexual reorientation, are responding to societal discrimination.

The 1970s brought a radical rethinking of the homosexuality-equals-mental-illness dictum. Forces operant were the increasingly strident voices of homosexual activists, criticism and questioning by psychiatrists (e.g., Marmor, Hoffman, Green) and an increasing body of data from studies of nonpatient homosexuals challenging the illness theory.

Two important large-scale studies conducted of nonpatient homosexuals were those of Siegelman and Saghir and Robins. Three hundred and seven homosexual and 137 heterosexual males were studied by Siegelman, utilizing several psychometric tests. On the Scheir-Cattell Scale, homosexuals scored higher on tender-mindedness, submissiveness, anxiety, and neuroticism, and lower on depression. The two groups did not differ on measures of alienation, trust, self-acceptance, sense of self, and dependency, or for neuroticism on the McGuire Neuroticism Scale. Homosexuals were also found to be more “goal directed.” When homosexuals and heterosexuals scoring low on femininity were compared, the difference in anxiety level disappeared.

Male and female homosexuals (about 150) and unmarried heterosexual contrast groups were compared in the comprehensive study by Saghir and Robins. Twenty-six percent of the male homosexuals and 6 percent of the heterosexuals had had psychotherapy, usually of a brief nature. Treatment was typically for depression, with either the breakup of a relationship or guilt

feelings instigating therapy. Only 9 percent of the homosexuals who sought psychiatric help did so to change to heterosexuality. There was no history of definable psychiatric disorder in 34 percent of the homosexuals and 40 percent of the heterosexuals. There were no significant differences with respect to any of the major psychiatric disorders, including affective states, drug abuse, alcoholism, and anxiety. At the time of study, 72 percent of each group was free of psychiatric disorder. Those homosexuals who had been feminine as boys (about two-thirds) had an adult history of anxiety phobia and psychophysiological reactions; those not previously feminine did not.

For the homosexual females, a third had had some psychotherapy, compared to a quarter of the heterosexual female group. One-third of the homosexual patients had sought help for depression (typically secondary to the breakup of a love relationship) and nearly half for insight or alleviation of guilt. One-quarter of the heterosexual patients sought help for depression and three-fourths for insight and emotional growth. Problem drinking was significantly higher among the homosexual subjects.

The authors concluded: "Homosexuals are not necessarily sick within the limits of the definition of sickness or manifest pathology interfering with health or with function. . . . Homosexual men are psychologically very similar to single heterosexual men while homosexual women tend to show a greater degree of psychopathology (drinking problems) than heterosexual women.

However, manifest neurotic disorders do not seem to be more prevalent among homosexual men or women.”

Criticism may be leveled against the Siegelman study on the grounds that the subjects were never interviewed, that psychometric tests do not fully tap mental functioning, and that the samples may not be representative of the homosexual population but reflect volunteer bias (just as psychiatrist patient samples are biased). The Saghir and Robins study may be criticized on the grounds that an unmarried heterosexual contrast group, while controlling for marital status and permitting better comparison of life-style experiences, is an atypical heterosexual sample; and one more prone to conflict and poor social adjustment.

Results from a large study conducted by the Institute for Sex Research (A. Bell and M. Weinberg) are promised within a year. It has assessed a large number of heterosexual and homosexual black and white males and females. The volume of data dealing with social and psychological adjustment as well as early life recalled events holds considerable potential.

Treatment of Homosexuality

Treatment of homosexuality has become simultaneously a better therapeutic prospect and an ethical dilemma. Psychiatry had historically found little for rejoicing in its attempts to reorient homosexuals (typically

males). Freud was less than optimistic when he noted that it was about as easy to reorient a homosexual as a heterosexual. But Bieber and colleagues reported in 1962 that about a third of their highly motivated, masculine-appearing predominantly homosexual males reoriented after at least 300 hours of psychoanalysis. Hadden reported reorientation in group therapy, and Bergler, Socarides and Hatterer reported success (typically labeled “cures”) with psychoanalytic or dynamically-oriented therapy.

Concurrently, behavior therapists instituted their strategies (following a largely unnoticed report in the 1930s) and additional evidence demonstrated that some highly motivated homosexual males could reorient toward heterosexuality. A variety of behaviorist techniques were introduced, but generally there was pairing of a noxious stimulus (electric shock to the wrist) with a visual image of an erotic male and absence of the noxious stimulus with an image of a female. Behavior therapy reorientation rates were comparable to insight-oriented therapies (about 20 to 40 percent) but the treatment time (two to four weeks) was considerably shorter. Follow-up evaluations in both types of studies indicated that the majority of those who reoriented remained so (for an extensive review, see Bancroft).

It has occurred to some clinicians that heterosexuality is more than achieving an erection while viewing a slide of a female nude; consequently, additional other forms of retraining have been introduced. Social skills

involved in meeting females, holding conversations, and requesting dates have been taught as well as techniques of advanced seduction. Social-skills training may include modeling, role playing, and behavior rehearsal. Subjects are trained in appropriate verbal fluency and body and facial expression. Social-skill therapists insist that the appropriate interpersonal responses are not part of the subject's prior repertoire and must be taught in order for laboratory-conditioned erotic responses to generalize to the "real world." (Interestingly, the one male "transsexual" reported as abandoning his goal of sex-change surgery to female status did so after sequential programs of social-skills training for heterosocial competence and aversion conditioning to male erotic partners.)

Comparative study of these interventions is difficult. Those patients who consult a psychoanalyst, a behavior therapist, or a social-skills facilitator are not the same. The duration of time involved in the intervention experience is not the same, and it is difficult to control for other variables entering the patient's life during a prolonged treatment period such as psychoanalysis.

Sex-partner availability and the feasibility of putting into practice newly learned behavior is another practical treatment consideration and brings into question another frontier —the sexual surrogate. The report by Masters and Johnson that they successfully utilized female surrogates for sexual and

emotional support in their treatment program of heterosexual dysfunction has sparked new and more open impetus for the use of professional partners. While a few therapists had formerly dispatched patients to prostitutes (programs for “penises without partners”) the past few years have seen the surfacing of surrogate training programs and surrogate associations.

The future role of surrogate partners is a provocative topic. On the one hand, they may experience difficulty in consequence of prosecutions for prostitution; on the other hand, there is the possibility of more formalized training and licensing, in the manner of other physical therapists. The issue of quality control in training and practice would then need be addressed, as in other areas of health-care delivery.

Professional homosexual organizations have strongly protested any treatment designed to reorient a male or female to heterosexuality. Their view is that homosexuality should be treated as a human variant, in the manner of left-handedness, and that any intervention reinforces the societal second-class status of a same-sexed partner preference. Supporters of therapeutic intervention insist they treat only volunteer patients, that the patient sets the goals of therapy, and that to deny treatment would be unethical. Homosexual activists assert that those who request heterosexual reorientation do so out of societal oppression and not out of free will. For a more detailed discussion of this dilemma see Green and Money.

Sex-reassignment Surgery

Since 1966 “sex-change” operations have been openly performed at American medical centers. While the controversy prior to the late 1960s was whether sex-change surgery was a legitimate treatment for anyone, the major thrust of that dispute has been blunted and the principal current question is *which* patients are the best candidates.

Several subgroups of male patients requesting sex change are being granted surgery. The past history of one subgroup better fits the life style of the feminine homosexual, another that of the transvestite, and the third that of the more classic transsexual. Those in the first group have had extensive homosexual experience, have been markedly effeminate, and have not experienced sexual arousal from cross-dressing. Misfitted into the larger homosexual subculture, they experience a sense of legitimization for their atypical behavior with the designation “transsexual,” and find new hope in the destigmatized medical product— the postoperative transsexual woman. The second group has been conventionally masculine in most behavior except for periodically dressing in women’s clothes, with accompanying sexual arousal. Sexual behavior has been both heterosexual and homosexual. Over time, the frequency of cross-dressing has increased and the degree of concordant genital arousal decreased. The person evolves a greater sense of femininity and an increasing desire to become a woman. The last group

consists of those males who were very feminine from earliest years, have not experienced genital arousal from cross-dressing, and whose sexual interests have always been directed toward males.

It has been suggested by Stoller that the first two groups are probably poor candidates for sex-change surgery in that their identity is too heavily comprised of male components. Other clinicians neglect past history and require the surgical candidate to convincingly demonstrate the capacity to function adequately in the aspired-for gender role. The degree to which the merits of these positions will be borne out by long-term follow-up evaluations is anxiously awaited.

As normal penises and breasts become surgical specimens in increasing numbers, the time is here for sophisticated follow-up studies. However, formidable difficulties are being encountered. Many patients wish to leave behind all painful memories of their siege and disappear into the “straight” community. They are uniquely reluctant to maintain any contact with their physician. Additionally, some physicians are disinterested in what becomes of the patient five years after leaving the operating room and paying all bills. I suggest that the \$5000 charged these patients, rather than generating additional professional income, be placed in an interest-bearing, escrow “follow-up” account. With each return visit by the postoperative transsexual, biannually for ten years, a portion of that account would be returned to the

patient. In this way, the patients would receive the treatment they request and science would learn more about how to best serve the transsexual.

Physical Disability

There are many categories of physical disability; only recently has much attention been paid to the ways they can impinge on sexuality. Disabilities can be grouped into (1) those which are pre-pubertal and *stable*, such as brain injury, spinal-cord injury, skeletal deformity, altered body growth, heart disease, and blindness; (2) those which are pre-pubertal and *progressive*, such as muscular dystrophy, cystic fibrosis, diabetes, and heart disease; (3) those which are post-pubertal and *stable*, such as spinal cord injury, genital amputation, disfiguring injuries, enterostomies, and blindness; and (4) those which are post-pubertal and *progressive*, such as heart disease, stroke, diabetes, muscular dystrophy, multiple sclerosis, and end-stage renal disease. The number of patients affected is obviously enormous. Research, education, and counseling at the interface of human sexuality and these disabilities is a long overdue development, but still in its infancy.

Two disabilities will be highlighted here, spinal-cord injury and heart disease. Spinal-cord injury and sexual behavior have traditionally been considered incompatible. This myth has been popularized by the D. H. Lawrence classic, *Lady Chatterley's Lover*. The number of spinal-cord-injured

patients has grown at a tragic rate, in consequence of the successes of national foreign policy, and the sales campaigns of the automotive and motorcycle industries.

New optimism exists for sexual rehabilitation of the paraplegic or quadriplegic. Rates at which the spinal-cord injured engage in sexual activity appear to be largely dependent on therapists' early institution of discussions and education regarding 'the patient's sexual potential. Spinal-cord-injured patients can be provided information regarding reflex erection from manual or oral penile manipulation, "stuffing" techniques for intravaginal penile containment, techniques of oral-genital pleasuring, and prospects for fertility. Seventy percent of 150 male patients reported by Comarr were capable of erection from mechanical stimulation, and the use of surgically implanted penile splints may prove to be useful in the remaining cases (as with other patients with irreversible impotency). Fertility in spinal-cord-injured males has been reported with the administration of intrathecal prostigmin to induce ejaculation.

Myocardial infarction and sexuality is significant for many older couples. Heart attack need not signal termination of one's sexual practices. Cardiovascular research indicates that the individual capable of ascending one or two flights of stairs should be able to tolerate the blood pressure and pulse changes accompanying coital activity with one's regular partner.

Intercourse with new partners is generally accompanied by considerably greater cardiac output and may be contraindicated for *medical* reasons.

Sexuality and Old Age

Sexual functioning during old age is an area of increasing social significance, as the aged population grows and sexuality becomes a more acceptable topic of discussion among all age groups.

Traditionally, old age and sexuality have been considered mutually exclusive. To a degree this mythology was debunked by the Kinsey data' of twenty-five years ago revealing that 75 percent of their males were sexually potent at the age of seventy and that couples in their sixties were engaging in weekly sexual intercourse. Physiological studies of the sex-response cycle by Masters and Johnson also reveal that males and females remain sexually responsive into advanced age. Changes that accompany advanced years in the male are a higher threshold to erotic stimulation for an erectile response, lessened ejaculatory force, and a longer post-orgasmic refractory period. For the aged female on adequate sex-steroid maintenance, multi-orgasmic response can be continued from earlier years.

Questions remain regarding gonadal hormone maintenance for sexual functioning. Some preliminary data on younger females suggest that rates of sexual intercourse are, in part, related to the stage of the menstrual cycle,

with a rate decrease during the luteal phase. This raises the possibility that varying combinations of exogenous estrogen and/or progesterone may affect sexual interest during postmenopausal years. Other evidence strongly links adrenal androgen to female drive, and females given testicular androgens typically report enhanced sexuality. Thus, low doses of androgen might be an effective hormonal stimulant. More compelling evidence from the aged female shows that atrophy of the vaginal mucosa, resulting in painful intercourse, plus the painful uterine contractions sometimes accompanying orgasm in this age group can be alleviated with gonadal hormone maintenance.

Whether older males who experience significant reduction in sexual functioning may benefit from hormone administration is less clear. While such “therapy” with testosterone has been practiced in the past with enthusiastic reports, controlled studies utilizing placebo administration are called for.

Sexual-partner availability for senior citizens is also problematic. Many older people lose their regular partner through death. Frequently, the surviving partner spends the final years of life in a home for the aged. In the past, the sexual health of residents of “nursing homes” has not been a primary concern. A decade ago Ullerstrom suggested that “sexual services” be made available to the aged and infirm. Certainly, educational programs for the elderly are needed, providing input that sexuality is part of the entire life

cycle. Additionally, the image of sexuality as the domain of the young and beautiful might be modified somewhat if the media specialists currently engaged in producing sexually explicit educational films would also feature geriatric “stars.”

Other Social Issues

Erotica and Antisocial Behavior

Several studies have attempted to test the popular assumption that exposure to sexually explicit materials is causally related to the commission of antisocial sexual behavior. The United States Commission on Obscenity and Pornography funded several projects. In one, 3000 American psychiatrists and clinical psychologists were surveyed as to whether they had ever encountered a case in which pornography was a factor in producing antisocial sexual behavior. Seven percent indicated they had, and another 9 percent suspected so.

Another approach has been obtaining the pornography histories of convicted male sex offenders. The Institute for Sex Research reported offenders, 900 males incarcerated for nonsexual crimes, and 500 non-prisoners. There were no significant differences in exposure between the two offender groups and the non-offender group. Nor were substantial differences reported in the degree of arousal to erotica.

Exposure of sex offenders and non-offenders to erotica during adolescence has also been studied. Exposure rates for sex offenders are reported as lower. In one study, 80 percent of the non-offender control group reported seeing photographic depictions of coitus during their teens,

compared to 54 percent of pedophiles and 62 percent of rapists.

The age at first exposure to erotica has been another focus. Half the persons in one sample incarcerated for a nonsexual crime had seen erotica between the ages of six and ten, whereas only 28 percent of the sex offenders reported such an experience. Similarly, a group of rapists was found to have had its initial experience with depictions of sexual intercourse more than three years later than non-sex offenders.

Regarding *recent* exposure to photographic depictions of coitus, again rapists reported less during the year preceding incarceration than did the controls for the year preceding interview, although no differences were found for other sexual depictions. Though the study by Gebhard et al. found no differences in reported response to erotica, other studies found one: sex offenders reported more often that they masturbated to the materials whereas no-sex offenders more often reported engaging in intercourse.

Do convicted sex offenders implicate erotica as having been responsible for their antisocial acts? Three studies asked this of sex offenders. In the first, only one of forty-seven offenders blamed erotica. In the second, no difference in blaming erotica was found between sex offenders and other criminals. In the third, sex offenders were more likely to blame sexual materials.

Reports of convicted offenders are difficult to interpret. Experiences

may be consciously or unconsciously rendered invalid. Some sex offenders may deny experience with erotic materials in an attempt to put themselves in a more favorable moral light. On the other hand, reports of sex offenders who blame erotica for their crimes must be regarded with even greater suspicion. The “scapegoat” phenomenon may be operant here, with an offender blaming some external agent rather than assuming responsibility himself.

The legal experience in Denmark has been of considerable interest to those concerned with the social significance of erotica. With the relaxation of laws controlling the availability of such materials to persons sixteen or older, reports of exhibitionism, voyeurism, and pedophilia were significantly reduced. While it is difficult to demonstrate a cause-and-effect relationship between legal availability of erotica and diminution of certain sex crimes, the Danish experience does not appear to be the result of changes in the reportability of various crimes, or changes in laws which decriminalize some offenses.

The studies of the Commission on Obscenity and Pornography are not without flaws and a critical brief on their scientific merit has been assembled by V. Cline. However, the greatest importance of the commission may be that more research was conducted on the subject of erotica during a two-year period than ever before. That the legal recommendation of the commission to eliminate laws controlling the availability of materials to consenting adults

was declared “morally bankrupt” by President Nixon may not have been a death blow to new legislation, as many public moral pronouncements of the abdicated president have become the object of unprecedented skepticism.

Clearly, better research is needed in this area in which heavy emotionalism is typically “balanced” against light facts. It is the responsibility of behavioral scientists and criminologists to conduct more careful investigations into the effects of erotic materials of various types, at various ages, and on various kinds of behavior. Behavior must include both antisocial sex acts, and an individual’s sexual competence in socially appropriate circumstances.

Social Rehabilitation of Sex Offenders

A variety of interventions have been utilized in attempts to control sex offenders. Historically, the approach to “treating” sex offenders (habitual pedophiliacs, rapists) has been indefinite incarceration and surgical castration.

Lately, somewhat more humane approaches have been introduced. Behavior therapists have attempted to recondition sexual responsivity away from inappropriate partners by pairing noxious stimuli (usually faradic stimulation) with pictures of children, or with fantasy and depictions of sexual assaults against adults. Outpatient group therapy of probationed sex

offenders has also been implemented and lower recidivism rates demonstrated. Social-skills training for relating comfortably to appropriate sexual partners (discussed earlier) also holds promise here.

As an alternative to irreversible, surgical castration of sex offenders, newer research has been directed to reversible pharmacological intervention. An antiandrogenic agent has been utilized to treat offenders in Europe. The drug, cyproterone acetate, a progestational agent, may act through blocking the metabolic (and hence behavioral) actions of androgen at tissue receptors, or by inhibiting gonadotropin secretion, or perhaps through direct action on the testes.

The great majority of male patients treated with cyproterone acetate report profound reduction of sex drive. This anti-libido effect has been achieved in 120 of 150 males in one series treated for a minimum of six months. The antiandrogen effect reportedly proceeds in the following order: libido, erection, orgasm. Maximum effect is described between the twentieth and twenty-fifth day. Reversibility of erectile capacity may take up to six weeks, depending on dosage and duration of treatment. Reversibility of spermatogenesis inhibition occurs within five months of discontinuing the drug. Absent from these studies, however, has been a double-blind design in which the placebo effects of cyproterone acetate, as well as motivational impetus for incarcerated offenders to report low sex drive to obtain freedom,

are ruled out.

If cyproterone acetate is pharmacologically effective, the possibility exists for a treatment program coupling diminished sex drive, in an outpatient setting, with social-skills training in appropriate sexual conduct, or other forms of psychotherapy. The drug could then be withdrawn when the patient is considered a good risk for continued control of socially inappropriate behavior.

In the United States the Food and Drug Administration has yet to approve the use of cyproterone acetate for the treatment of sex offenders, though approval has been given for its use in controlling androgen-responsive carcinoma of the prostate. Public reaction against the use of cyproterone has been considerable. The label “chemical castrator,” has contributed much emotionalism to the issue, and cries have been heard that the drug would be used against political dissenters. At the other end of the political spectrum, opposition has been mobilized against the use of drugs that might release rapists and pedophiliacs from prison by those who feel these inmates should remain permanently incarcerated.

Research and ethical issues remain. Whether cyproterone acetate and other “antiandrogenic” drugs indeed reduce sex drive has yet to be adequately documented, and which subgroups of sex offenders might

respond best to a true antiandrogen is also not known. In individuals for whom the significance of violence toward women is paramount, rather than a strong sex drive, the drug might have only minimal effect. Similarly, for those males lacking the social skills required to engage adult partners, the drug might also have only minimal effect.

Beyond this, the capacity of an incarcerated person to give a truly informed consent remains a dilemma. A prisoner confronted with the option of taking a drug or participating in a behavior-modification program that may shorten prison stay, and told the possible risks, may sign an “informed” consent, but still act under coercion. A variety of alternatives have been suggested, including uncoupling the duration of incarceration from participation in experimental treatment programs, or initiating the program *after* the individual is released. The different approaches are extraordinarily complex and have been debated at length. One example is found in the proposed policy regarding protection of human subjects published by the Department of Health, Education and Welfare.

Common Illegal Sexual Behavior

In a trial in California in 1972, a defendant was charged with (and convicted of) conspiracy to commit oral copulation. The maximum sentence for this crime is fourteen years. The U.S. Supreme Court refused to consider

the case. As of this writing, oral copulation is a crime in forty-two states, including when practiced by a married couple in the privacy of their bedroom. Oral copulation is a sexual act engaged in by about 80 percent of the adult population.

In a trial in New Jersey in 1974, a defendant was charged with (and convicted of) fornication (sexual intercourse involving an unmarried, consenting adult female). As of this writing, the conviction is being appealed on constitutional grounds. Fornication and/or cohabitation is a crime in twenty-two states. Fornication is practiced by at least 50 percent of the population.

In a trial in Texas in 1974, a man was convicted of publicly wearing women's clothes. There was no intent on the individual's part to perfect a disguise to elude police detection or attempt fraud. The U.S. Supreme Court refused to consider the case. Cross-dressing is practiced by thousands of transsexuals and transvestites to promote emotional well-being.

Anal intercourse, also called in the statutes "the crime against nature" (nineteen states) or "the act not to be mentioned among Christians" is a crime in forty-five states. The maximum penalty in California is ten years. Anal intercourse is reportedly practiced by some 20 percent of young (under age thirty-five) *heterosexual* couples and by a majority of homosexual males.

What effect do these laws have on mental health? Many patients experience difficulties in sexual relationships due to guilt feelings when considering or practicing these common sexual behaviors (e.g., oral copulation). Legal pronouncement of such behaviors as criminal positively reinforces these feelings. Additionally, therapists treating varieties of sexual dysfunction and counseling couples or individuals with inhibitions about such behaviors are advocating criminal acts.

Persons with a strong need to wear clothes more typically worn by the other sex experience frustration when denied access to these garments. Additionally, many medical centers engaged in sex-reassignment surgery for transsexuals require that the patient live in the social role aspired to for one year prior to surgery. This trial period is critical in helping safeguard against disappointment after irreversible intervention.

The removal of homosexuality per se as a category of mental disorder by the American Psychiatric Association in 1974 reflected, in part, a growing awareness of the psychiatric consequences of labeling certain kinds of behavior as mentally disordered. Similar psychiatric arguments exist for labeling certain kinds of behavior as criminal. Vulnerability to blackmail and police harassment are additional hazards.

Sex Education

Sex education, whether in medical school or kindergarten, remains controversial. Instruction on human sexuality in medical school came into vogue in the 1970s, with 95 percent of schools participating. However, effective delivery of sexual knowledge and its clinical impact remain to be adequately evaluated.

The most widely used assessment instrument has been the Sexual Knowledge and Attitude Test (SKAT) developed by Lief, and modified by Lief and Ebert. In one of the few efforts at determining whether a course changed either knowledge or attitudes the test was given in a before-and-after design by Golden and Liston. No student change was reported. However, Ebert (personal communication) points out that if the authors had statistically analyzed their data, significant student improvement would have been found. Irrespective of whether change in knowledge or attitude can be accurately measured, it is another matter whether change, if present, carries over into interpersonal relations at either the private or professional level. Most students bring to their medical experience sexual misinformation, conflicts, and blocks. These interfere with sexual history taking and sexual counseling. Thus, the goal of providing information and facilitating a comfortable, objective patient-doctor exchange. How to effect this is controversial.

An explosive use of explicit sex films in educational settings occurred in the 1970s. Advocates of the use of erotica point to a wide range of benefits:

“desensitization” to various aspects of sexual interaction, augmented student dialogue on sexuality stimulated by the material, greater comfort in interviewing in the area of sexuality, and general education regarding the range of sexual experiences. Detractors see the use of erotica as an unnecessary gimmick that depersonalizes sexuality and contributes to the voyeurism of student and teacher.

The major source of erotic films used in medical schools has been Multi-Media Resource Center in San Francisco, under the direction of Reverend Ted McIlvenna. Twenty-minute films depicting a variety of sexual behaviors, including male-female typical, male-female atypical (male paraplegic-female able-bodied), male-male, female-female, and solo male or female have been produced. More recently commercial enterprises (e.g., Edcoa, Englewood, New Jersey) and psychiatrists (Paul Miller, University of Nevada, Reno) have been producing and selling erotic films for educational purposes. Multi-Media has also produced a film designed to treat premature ejaculation, and Edcoa released a film of a physician’s “sexological” examination of a couple (both partners present and the genitalia demonstrated, examined, and explained).

Additional educational strategies include presentations by persons with various sexual life styles, and small group student interactions, which are seen as catalyzing comfortable communication and private attitude reassessment. The degree to which each or any of these strategies is

successful is not well documented.

Evaluating the clinical effect of general information giving (and obtaining) is complex.

Assessments need to be made of knowledge imparted, attitude change, and capacity to conduct sexual interviews and counseling. Ratings of competence must utilize objective criteria by trained raters, and the subjective experience of the patient. Correlations could also be made between course information input and attitude change (if any) and ratings by self and partner(s) of sexual competence and satisfaction. Valid assessment instruments need to be constructed for such evaluations.

Sex education for children remains politically volatile. Most people believe that “sex education” is a good thing. What is not agreed upon is at *what age* education should begin, *who* should do the educating, and just *what* should be taught. Advocates of sex education in the earliest school years stress that sex can be removed from the arena of mystery and misinformation and that lack of education is associated with adult sexual dysfunctions and the commission of sexual offenses.

The primary source of sex information has been the peer group (true for 91 percent of 477 lower-class males, 89 percent of 888 incarcerated criminals, and 89 percent of 1395 sex offenders as recently as the mid

nineteen-sixties). The peer group has rarely been a source of accurate sexual counseling.

The public school system has not fared much better. Sex education courses have typically vacillated between lessons in “reproductive biology,” depicting the heroic canine sperm swimming upstream to find its helplessly awaiting mate, and lectures on maintaining a hygienic body, powered by the energies of an aseptic soul.

The Sex Information and Education Council of the United States (SIECUS) in New York, founded by Mary Calderone, has been a catalytic force during the past decade in providing educational material and counsel for teachers and students. SIECUS also maintains an active index and reviewing system of available educational books and films.

Sex educators of the young optimistically believe that effective delivery of information at appropriate developmental periods will promote a positive attitude toward one’s body (genitalia included) and will reduce the rates of venereal disease, unwanted pregnancy, sexual dysfunction, and sexual offenses. Firm data to support this prediction are awaited.

Conclusion

These research-treatment frontiers are broadly based, reflecting the wide scope of human sexuality. The topics are not exhaustive, but encompass some areas of therapeutic, research, political, and social significance. Sexual attitudes and conduct are problematic. They are subject to what may appear as capricious change, dictated by an evolving social structure. Here is an area of science in which *a priori* knowledge has traditionally compromised dedication to fact and the search for greater wisdom. Here is an area of treatment in which personalized value systems can compromise the goal of implementing patient-activated guidelines. My hope is that this chapter will quickly become “dated,” and that by the time the editors formulate the third edition of the *Handbook*, its research questions will be considered “quaint.” If so, we will know much more about the bases of human sexuality and how to promote sexual health.

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