

## The Development of Sexual Orientation in Women

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Throughout this century, most theorizing and empirical research about women's sexual orientation have been guided by a belief in the essential masculinity of lesbians and the femininity of heterosexual women. This view can be traced to the influential inversion theories of 19th-century sexologists such as Richard von Krafft-Ebing and Havelock Ellis. Viewing heterosexuality as the biological norm, these scholars believed that homosexuality results from a biological abnormality that leads to gender-atypical ("inverted") sexual attractions and personality.

Although there were differences among the various inversion theories, they shared three core elements. First and foremost, inversion theorists characterized heterosexual women as feminine and lesbians as masculine. In *Psychopathia Sexualis*, Krafft-Ebing (1908/1950, pp. 398-400) described the most extreme form of female homosexuality as a woman who "possesses of the feminine qualities only the genital organs; thought, sentiment, action, even external appearances are those of the man." A second core belief was that sexual orientation is primarily biological in origin. As Meyer-Bahlburg (1984, p. 375) noted, the inversion model has been "the concept guiding biological explanations of homosexuality" throughout this century. A third belief implicit in inversion theories was that social, cultural, and experiential factors have negligible influence on women's sexual orientation. The impact of this perspective has been widespread, especially in psychology, and continues to this day.

The thesis of this review is that the cumulative body of empirical research on women's sexual orientation refutes each of the main inversion assumptions. In the following sections we review this research literature. Next we present an alternative perspective on women's sexual orientation, the intimate careers framework, which is compatible with available research findings, and we identify promising directions for future research.

This review focuses exclusively on women. Empirical evidence

suggests that the phenomena of sexual orientation are different for women and men. Efforts to present universal theories of sexual orientation that apply to both sexes have tended to take male experiences as the norm, much to the detriment of our understanding of women (as an example, see the critique of Bern's Exotic-Becomes-Erotic theory by Peplau, Garnets, Spalding, Conley, & Veniegas, 1998). By *sexual orientation* we will refer broadly to women's romantic and sexual attractions and relationships, and to the question of why some women's partners are exclusively men, or exclusively women, or include both sexes. We are concerned with the origins and antecedents of women's sexual orientation.

### Psychological Masculinity, Femininity, and Women's Sexual Orientation

Inversion theorists believed that lesbians have masculine personalities, including such qualities as assertiveness and independence that are traditionally associated with men. In contrast, heterosexual women were thought to have feminine personal attributes. Havelock Ellis (1928, p. 250) claimed that an observer could detect a lesbian by "the direct speech, the inflexions of the voice, the masculine straightforwardness and sense of honor." The psychologists who created the first standardized measures of psychological masculinity and femininity in the 1930s (e.g., Terman & Miles, 1936) shared this inversion assumption (for critiques, see Bern, 1993, Lewin, 1984). In two lines of research, the possible links among masculinity, femininity, and sexual orientation have been investigated: studies comparing the psychological attributes of lesbian and heterosexual adults and studies investigating gender nonconformity in girls.

#### *Comparing Adult Lesbian and Heterosexual Women*

Systematic research comparing the psychological attributes of lesbian and heterosexual women began in the 1970s, spurred by the development of two new measures of psychological masculinity and femininity: the Bern (1974) Sex-Role Inventory (BSRI) and the Personal Attributes Questionnaire (PAQ; Spence & Helmreich, 1978). For example, Finlay and Scheltema (1991) recruited 58 lesbians from gay organizations at a university and in the local community and 129 presumably heterosexual women from college classes. Lesbians scored significantly higher on the PAQ masculinity measure than did heterosexual women (mean of 30 vs. 28) but did not differ on femininity. To evaluate systematically whether there are consistent differences across studies in the scores of lesbian and heterosexual women,

we<sup>1</sup> conducted three meta-analyses, based on 14 published studies using the BSRI and the PAQ.

Are heterosexual women more feminine than lesbians? In 13 studies enough information was reported about the femininity scores of lesbian and heterosexual women to perform a meta-analysis. After controlling for the sample size of each study, the average effect size was  $d = 0.13$ . This number is not significantly different from zero, indicating no significant effect. Lesbians and heterosexual women were indistinguishable in psychological femininity.

Are lesbians more psychologically masculine than heterosexual women? In our meta-analysis based on 13 studies, the average effect size was  $d = 0.39$ , which is significantly different from zero. Using Cohen's (1988) cut-offs, this value is in the small-to-moderate effect size range. In these studies, lesbians scored somewhat higher on psychological masculinity than heterosexual women, although the magnitude of this difference was not large. Note also that the measures of masculinity used in this research were narrow and might be better conceptualized as assessing self-perceived instrumentality. In concrete terms, lesbians were more likely than heterosexual women to give themselves high ratings on being *willing to take risks, having a strong personality, or being self-sufficient* (Oldham et al., 1982), and as someone who is *independent, stands up well under pressure, and makes decisions easily* (Finlay & Scheltema, 1991).

Are lesbians more androgynous than heterosexual women? A person

\*We analyzed 14 published studies that used either the BSRI or the PAQ. These included Carlson & Baxter, 1984; Carlson & Steuer, 1985; Dancey, 1992; Finlay & Scheltema, 1991; Gladue, Beatty, Larson, & Stanton, 1990; Hawkins, Herron, Gibson, Hoban & Herron, 1988; Kurdek & Schmitt, 1986; Kweskin & Cook, 1982; Larson, 1981; LaTorre & Wendenberg, 1983; Oldham, Farnill & Ball, 1982; Peters & Cantrell, 1993; Spence & Helmreich, 1978; and Stokes, Kilmann, & Wanlass, 1983. A limitation of using only published research is that it may overrepresent studies finding significant differences between lesbian and heterosexual women. If so, the results of our meta-analyses may exaggerate actual lesbian/heterosexual differences. We included studies that reported means and standard deviations on the M and F scales for lesbian and heterosexual women. We also included studies that classified women as androgynous, feminine, masculine, or undifferentiated if they listed the percentages of lesbians and heterosexual women in all four categories. For these studies, chi-square values were calculated by comparing the percentage of lesbians and heterosexual women who were categorized as high in M (i.e., those typed as androgynous or masculine) versus low in M (i.e., feminine or undifferentiated), by comparing the percentage of lesbians and heterosexual women who were categorized as high in F (i.e., androgynous or feminine) versus low in F (i.e., masculine or undifferentiated), and by comparing the percentage of lesbians and heterosexual women who were categorized as androgynous versus other categories. The chi-square values were then converted to  $d$  values. The final effect sizes for all meta-analyses were determined by the average effect size weighted by the number of subjects for each study. We are grateful to Scott Roesch for his invaluable assistance in conducting these analyses. A fuller report on the meta-analyses is in preparation (Spalding, Peplau, & Roesch, 1999).

is said to be androgynous if she or he scores relatively high on both masculinity and femininity. We identified 10 published studies in which the percentages of lesbian and heterosexual women categorized as feminine (high on F and low on M), masculine (high on M and low on F), androgynous (high on both), or undifferentiated (low on both) were reported. We found no difference between the likelihood of lesbian and heterosexual women being classified as androgynous in the meta-analysis. The average effect size was 0.12, which did not significantly differ from zero. Lesbian and heterosexual women did not differ in psychological androgyny.

*Broader measures of gender atypicality.* The PAQ and BSRI restrict the assessment of masculinity and femininity to self-perceived traits, such as self-confidence, assertiveness, nurturance, and dependence. Would more inclusive measures of masculinity and femininity show stronger associations with sexual orientation? Lippa and Arad (1997) used the PAQ but also developed additional measures of gender typicality based on a person's interest in gender-associated occupations (e.g., physician, elementary school teacher), activities (e.g., cooking, car repair), and hobbies (e.g., dancing, home electronics). They found that for women, sexual attraction to women was unrelated to PAQ masculinity, PAQ femininity, or gender atypicality of interests in occupations, activities, or hobbies. The authors speculated that women's same-sex attraction may be more strongly linked to social attitudes such as feminism than to personality.

*Taking stock of research on psychological masculinity and femininity in adults.* Researchers have consistently demonstrated that lesbian and heterosexual women do not differ on measures of psychological femininity or androgyny. On average, lesbians do score somewhat higher than heterosexual women on two leading measures of masculinity, but the size of this difference is modest. Furthermore, the observed difference in masculinity scores between lesbian and heterosexual women may be an artifact of biased sampling methods, including the use of nonrepresentative samples in which lesbian and heterosexual women differ in their employment, marital status, and feminism. When lesbians and heterosexual women are matched on relevant background characteristics, differences in masculinity may disappear. For example, Peters and Cantrell (1993) found that lesbian and heterosexual women matched for feminist beliefs had similar scores on both masculinity and femininity. Available research does not permit a systematic investigation of the impact of sampling bias or confounding variables. Consequently, these remain plausible explanations for the differences found in previous research. It is essential that future research pay closer attention to the comparability of lesbian and heterosexual samples.

### *Childhood Gender Nonconformity and Women's Sexual Orientation*

If sexual orientation is linked to personality, differences between lesbian and heterosexual women might be evident in childhood and adolescence. The detailed life histories of female sexual inverts presented by Krafft-Ebing and Ellis included descriptions of gender atypical play and interests in childhood. For example, Miss V, a college teacher described by Ellis (1928, p. 230), recalled that "as a child I loved to stay in the fields, refused to wear a sunbonnet, used to pretend I was a boy, climbed trees, and played ball. I liked to play with dolls, but did not fondle them."

Recently, Daryl Bem (1996) gave prominence to the role of childhood gender conformity versus nonconformity in determining adult sexual orientation. In his "Exotic Becomes Erotic" (EBE) theory of sexual orientation, Bem proposed that "gender conformity/nonconformity in childhood is a *causal antecedent* of sexual orientation in adulthood" (1996, p. 322, italics added). According to Bem's model, adolescents become sexually aroused in the presence of exotic peers, specifically the gender group who were unfamiliar or perceived as different in childhood. Consequently, girls who play with girls and view boys as dissimilar and unfamiliar will become heterosexual. In contrast, girls who play with boys and perceive girls as exotic will become homosexual. Does empirical research support the hypothesis that feminine girls grow up to become heterosexual adults and tomboys become lesbians?

In America, the term "tomboy" is used colloquially to refer to girls who like to play "boy" games or enjoy traditional masculine activities. Such girls may also disdain traditionally female pursuits or clothing. If tomboyism is a precursor to lesbianism, which characterizes no more than 3% of the adult female population in the U.S. (Laumann, Gagnon, Michael, & Michaels, 1994), we might expect tomboyism to be rare. In fact, the incidence of tomboyism is high. Approximately half of adult American women report having been tomboys in childhood (e.g., Burn, O'Neil, & Nederend, 1996; Hyde, Rosenberg, & Behrman, 1977). For example, Plumb and Cowan (1984) found that being a tomboy was reported by 38% of fourth grade girls, 62% of sixth graders, 48% of eighth graders, 62% of tenth graders, and 52% of young adult women. Research consistently demonstrates that at least half of girls and women define themselves as being or having been tomboys.

To study the association between tomboyism and women's sexual orientation, researchers have compared the remembered childhood experiences of adult lesbian and heterosexual women. A study by Phillips and Over (1992) is illustrative. A sample of 87 heterosexual and 46 lesbian

women recruited from community health centers were asked retrospective questions about their childhood. Most women remembered being youthful gender nonconformists: 63% of heterosexual women and 86% of lesbians remembered having a preference for boys' games and toys. Likewise, 63% of heterosexual women and 77% of lesbians recalled being considered a tomboy by others.

To evaluate the link between childhood gender nonconformity and adult women's sexual orientation, Bailey and Zucker (1995) conducted a meta-analysis of 16 studies. They found a statistically significant association between women's retrospective reports of gender nonconformity and their adult sexual orientation, with a mean effect size of .96. This is a large effect and is one of the strongest predictors of women's sexual orientation yet identified. Nonetheless, this measure is extremely limited in its predictive power because tomboyism is so widespread. To illustrate this point, Bailey and Zucker (1995, p. 49) estimated that only 6% of the girls who show a degree of cross-sex behavior typical of those who will become lesbians (i.e., who score above the median of the lesbian distribution) will actually become lesbian. Fully 94% of the girls who score above the lesbian median on gender nonconformity will be heterosexual. In short, the overwhelming majority of tomboys become heterosexual adults.

All available studies of childhood gender nonconformity and women's sexual orientation rely on retrospective reports. Because memories of childhood may be colored by adult experiences, retrospective studies do not provide conclusive evidence of causal processes. Lesbians may be prone to exaggerate their childhood gender atypicality, in line with stereotypes of lesbians as masculine (Ross, 1980). Only longitudinal studies following women from childhood to adulthood will put this issue to rest. Currently, such studies do not exist. Lacking longitudinal data, the evidence linking childhood gender nonconformity and women's sexual orientation must be considered tentative. As Bailey (1996, p. 77) noted: "Do tomboys tend to become lesbians? Unfortunately, there is no certain answer, because no prospective study has followed tomboys into adulthood."

### **The Biology of Women's Sexual Orientation**

A second basic tenet of inversion theory is that heterosexuality is the biological norm and homosexuality results from a biological anomaly. Krafft-Ebing (1908/1950, p. 350) argued that sexual inversion is an "inherited abnormality resulting from a defect in the cerebral centre [that] mediates the psychical and, indirectly, also the physical sexual characters." Ellis (1928) suggested that prenatal hormonal abnormali-

ties might play a part. In the following sections, we review research investigating possible differences between heterosexual and lesbian women in body build, in circulating levels of sex hormones among adults, in exposure to atypical prenatal hormones, and in genetics.

#### *There Are No Anatomical Correlates of Women's Sexual Orientation*

According to Kraft-Ebbing (1908/1950), the most extreme form of homosexuality in women was associated with a masculine body build: A woman "whose frame, pelvis, gait, appearance, coarse masculine features, rough deep voice, and so forth, betray rather the man than the woman" (p. 399). The writings of 19th-century American physicians echoed this theme, suggesting that menstrual difficulties and an enlarged clitoris were signs of sexual inversion (e.g., Chauncey, 1983). Beginning in the 1930s, researchers initiated more systematic investigations designed to confirm these clinical impressions.

The most remarkable of the early studies was conducted by the Committee for the Study of Sex Variants (Henry, 1948; commentaries by Minton, 1986; Terry, 1990). A central goal of this research was to document the masculinity of lesbians' physiological attributes (Henry, 1948, p. xii). In summarizing their findings from physical examinations of 40 lesbians, the researchers suggested that lesbians could be characterized by firmer muscles, distinctive pelvic structure, and atypical development of the clitoris. Unfortunately, these physical differences between lesbians and a normal group were "difficult to define specifically" (Henry, 1948, p. 1049) and "structural deficiencies" were less evident than psychological ones. This study represents the first systematic attempt by American researchers to test the inversion prediction that lesbians have more masculine bodies than heterosexual women. Research on the anatomical correlates of women's sexual orientation continued for many years but was eventually abandoned because research findings were inconclusive and contradictory (e.g., A. Ellis, 1963).

#### *Adult Hormone Levels Are Not Associated with Women's Sexual Orientation*

As scientific knowledge about the endocrine system advanced, it was suggested that sexual orientation might be affected by the circulating levels of testosterone, estrogen, or other sex hormones in adults (see reviews by Banks & Gartrell, 1995; Meyer-Bahlburg, 1984). The general hypothesis was that lesbian and heterosexual women would differ in their hormone levels, with lesbians showing patterns similar to those of heterosexual men. Some differences between lesbians and heterosexual

women were reported in early publications (e.g., Gartrell, Loriaux, & Chase, 1977). In more recent studies using improved methods for assessing hormone levels and appropriately matched comparison groups, no significant differences between lesbian and heterosexual women have been found (Dancey, 1990; Downey, Ehrhardt, Schiffman, Dyrenfurth, & Becker, 1987). These findings, together with more numerous studies of men and a growing understanding of the complexity of hormonal effects in humans, have discredited the adult hormonal theory of sexual orientation (Banks & Gartrell, 1995; Meyer-Bahlburg, 1984). "The current consensus opinion is that no causal relationship exists between adult hormonal status and sexual orientation" (Byne, 1995, p. 310).

#### *Prenatal Hormones Have Negligible Effects on Women's Sexual Orientation*

Currently, the most influential biological theory of sexual orientation proposes that exposure to particular prenatal hormones during a critical period before birth affects the development of brain structures which in turn influence sexual orientation (Bailey, 1995). Illustrative of the neuroendocrine theory is the analysis of Ellis and Ames (1987, p. 248) who asserted that "sexual orientation in all mammals is primarily determined by the degree to which the nervous system is exposed to testosterone, its metabolite estradiol, and to certain other sex hormones." Ellis (1996, p. 22) explained, "if a female fetus is exposed to high levels of testosterone in the latter half of gestation, her brain will function as a male brain. Following puberty, one manifestation of this male brain functioning will be a preference for female sex partners." The neurohormonal theory has been tested among humans in two types of research: analyses of brain structures and studies of the effects of prenatal hormones on behavior (see reviews by Bailey, 1995; Zucker & Bradley, 1995).

*Brain structures.* The most direct and definitive evidence for a neuroendocrine theory would be demonstrations of reliable differences between the brain structures of heterosexuals and homosexuals. In the first study to address this possibility, LeVay (1991, p. 1035) investigated two nuclei in the hypothalamus. He "hypothesized that INAH2 or INAH3 is large in individuals sexually oriented toward women (heterosexual men and homosexual women) and small in individuals sexually oriented toward men (heterosexual women and homosexual men)." Although LeVay speculated about homosexual women, his actual research did not include lesbians. LeVay's hypothesis concerning gay men was confirmed for one of the regions studied but not for the second.

In a few more recent studies other structural differences between brain regions in gay and heterosexual men have been investigated (see the review by Bailey, 1995). This research has been widely reported in the popular press as the "discovery of a gay brain." In the scientific community, however, the replicability of these findings has been questioned and their interpretation remains controversial (Byne, 1995). It is essential to note that no researchers have investigated brain structures in lesbian women. Such research would be of considerable interest. At present, there is no direct evidence that lesbians have masculinized brain structures or neuroanatomy that is distinctive from other women.

*Prenatal hormones.* In a second line of research the prediction that prenatal exposure to masculinizing hormones influences sexual orientation in women has been tested. Because experimentation on human fetuses would be unethical, scientists have relied on naturally occurring quasi-experiments created by genetic anomalies or medical treatments during pregnancy. Some researchers have investigated a rare genetic disorder called congenital adrenal hyperplasia (CAH) that exposes female fetuses to androgens and often results in ambiguous or masculinized genitals (see reviews by Hines & Collaer, 1993; Zucker et al., 1996). Other researchers have studied the impact of DES, a medicine prescribed for women during the 1940s-1960s to prevent miscarriages that has a masculinizing/defeminizing effect on the brain (Meyer-Bahlburg et al., 1995). Do CAH and DES produce homosexuality in women, as predicted by the neuroendocrine theory?

In general, the vast majority of CAH women are heterosexual in their reports of sexual desire, fantasy, and behavior. A recent carefully designed study by Zucker and his colleagues (1996) is illustrative. They systematically assessed the sexual experiences of a sample of CAH women and compared them to the experiences of their non-CAH sisters. These researchers found no same-sex behavior of any kind (including dating or kissing) among their CAH or non-CAH control samples. None of the women self-identified as lesbian. None of the CAH or control women reported exclusively lesbian fantasies. Only one difference emerged: 27% of the CAH women compared to 0% of the controls reported bisexual fantasies. In short, these results hint at a possible increase in bisexual fantasies among CAH women but provide no support for neuroendocrine theory predictions about women's sexual behavior or identity.

The main empirical research on DES is reported by Meyer-Bahlburg et al. (1995) who studied three samples including a total of 97 DES-exposed women and appropriate control groups. Based on a standardized interview asking about sexual fantasies, attractions, responsiveness, and

behavior both during the past 12 months and since puberty, women were rated on 7-point Kinsey scales from 0 (*exclusively heterosexual*) to 6 (*exclusively homosexual*). The great majority of DES women were heterosexual. Measures of lifetime sexual responsiveness are illustrative. Most DES women were classified as heterosexual in their sexual responsiveness. Nonetheless, 7% of the DES reported same-sex responsiveness: three women had scores of 3 (midpoint) on the Kinsey measure and four women were considered to have a lifetime pattern of predominantly lesbian responsiveness (scores of 4 or 5). The researchers (Meyer-Bahlburg et al., 1995, p. 17) concluded that "most of the differences between DES and control women were limited to degrees of bisexuality, and for many of the women, the bisexuality was confined to imagery and was not expressed in actual sex with partners."

Taken together, CAH and DES studies provide virtually no support for the prenatal hormone theory of women's sexual orientation. Experts in the field are appropriately cautious in their interpretations. According to Gladue (1988, p. 402), "it is unlikely that the apparently direct and seemingly causal relationship between hormones and [central nervous system] development seen in animal models is directly applicable toward the human." Zucker et al. (1996) observed that "the main bone of contention is whether variations in the prenatal hormonal milieu have any effect at all and, if they do, are [they] of practical significance" (p. 93). Women exposed to DES and CAH usually become heterosexuals. Most lesbians were never exposed to DES, CAH or, as far as we know, to other atypical prenatal experiences. Prenatal hormones do not offer a general explanation of variations in women's sexual orientation in the population at large. *The Genetics of Women's Sexual Orientation*

Most inversion theorists were convinced that sexual orientation is strongly influenced by heredity and took as their evidence that homosexuality seemed to run in families. Through systematic research, it has been found that lesbians are more likely than heterosexual women to report having homosexual relatives, but the interpretation of this finding is open to question.

Several researchers have asked lesbian and heterosexual women questions about the sexual orientation of their siblings (e.g., Bailey & Bell, 1993; Bailey & Benishay, 1993; Bailey, Pillard, Neale, & Agyei, 1993; Pattatucci & Hamer, 1995; Pillard, 1990; Pillard, Poumadere, & Carretta, 1981). Across studies, lesbians' reports of having lesbian or bisexual sisters ranged from 6% to 25%, and reports of gay or bisexual brothers ranged from 5% to 15%. In contrast, among heterosexual

women, the comparable figures for sisters were 0% to 11% and for brothers were 0% to 2%. Other researchers have studied twins reared together, based on the idea that there should be greater concordance (similarity) for sexual orientation among monozygotic twins than among dizygotic twins or adoptive sisters. For example, Bailey and his colleagues (1993) recruited 147 women through lesbian-oriented publications in several cities. The most stringent test of the genetic hypothesis included only lesbian (not bisexual) respondents and considered a sister to be concordant for sexual orientation only if she was lesbian (not bisexual). Consistent with a genetic factor in sexual orientation, the concordance rate was 38% for monozygotic twins, 15% for dizygotic twins, and 3% for adoptive sisters.

Evidence that homosexuality runs in families supports but does not prove a genetic contribution to homosexuality. Many attributes, such as religious affiliation and the language one speaks, also run in families, but for reasons that are environmental rather than genetic. The clearest demonstration of genetic factors would come from studies of monozygotic twins reared apart. Such twins share the same genes but not the same rearing environment. The only published data on the sexual orientation of female monozygotic twins separated at birth come from the University of Minnesota twin study (Eckert, Bouchard, Bohlen, & Heston, 1986). Of the 55 pairs of identical female twins tested, three women were lesbian and one might be considered bisexual. In all four cases, the twin's sister was exclusively heterosexual. All pairs were discordant for sexual orientation. Although based on a tiny sample, these data argue against a genetic basis for women's sexual orientation.

Currently, proponents of genetic perspectives view the research evidence as encouraging and justifying the search for specific genetic markers of sexual orientation. In contrast, skeptics emphasize possible limitations of available studies (e.g., McGuire, 1995). These include the inability of current research to disentangle the impact of genes and environment on family members' sexual orientation, the use of unrepresentative and possibly biased samples, and problems in the assessment of sexual orientation.

*Genetic markers.* Pattatucci and Hamer (1995, p. 166) suggested that "the only definitive way to demonstrate a genetic contribution to the expression of homosexuality in individuals is to isolate a gene." In two studies, these researchers (Hamer, Hu, Magnuson, Hu, & Pattatucci, 1993; Hu et al., 1995) found preliminary evidence of a possible genetic marker in pairs of gay brothers. The second study also included lesbian sisters (Hu et al., 1995). In contrast to the men's data, no evidence was found for genetic similarity between the lesbian sisters on

any of the markers tested. The researchers concluded, "The simplest explanation of our results is that a locus at Xq28 influences sexual orientation in men but not in women. . . . Whether individual variations in female sexual orientation are influenced by genes remains to be seen" (p. 255). Newer research has also challenged the Xq28 linkage for men (Wickelgren, 1999).

To recap, more than 50 years of research has failed to demonstrate that biological factors are a major influence in the development of women's sexual orientation. Lesbian and heterosexual women are indistinguishable in their physical anatomy and adult levels of masculine and feminine hormones. The great majority of women exposed to atypical levels of sex hormones before birth are heterosexual. Based on self-reports, there is some evidence that a lesbian sexual orientation may run in families, but the interpretation of this finding is open to debate. Siblings share not only common genes but also common social experiences, and available studies cannot assess the relative influence or interaction of nature and nurture. Contrary to popular belief, scientists have not convincingly demonstrated that biology determines women's sexual orientation. Available evidence indicates that biological contributions to the development of sexual orientation in women are minimal.

### **Sociocultural Influences on Women's Sexual Orientation**

Inversion theorists assumed that the influence of society, culture, and experience on sexual orientation is negligible. According to Krafft-Ebing, "*The natural disposition is the determining condition; not education or other accidental circumstances, like seduction*" (1908/1950, p. 289, italics in original). Noting that homosexuality is a "tendency deeply rooted in an organic inborn temperament," Ellis (1928, p. 329) suggested that the prevalence of homosexuality is unrelated to social tolerance or prohibitive laws. Today, the growing body of cross-cultural and historical research on women's sexual orientation strongly challenges this view that sociocultural influences are minor.

The phenomena of sexual orientation are highly variable across time and place. The interrelationships among masculinity/femininity, personal identity, and sexual behavior differ depending on the social context. Adequate theories about the development of sexual orientation cannot ignore this variability. In the following sections, we present research findings that illustrate these diverse patterns.

#### *Masculinity and Femininity are Not Intrinsically Linked to Women's Sexual Orientation*

Inversion theorists assumed an intrinsic and presumably universal

connection between masculinity and a lesbian sexual orientation. Sociocultural research refutes this view. As one illustration, anthropologists have identified cultures in which same-sex intimacy is linked to femininity in both partners. An example is provided by Gay's (1986) analysis of school girls in a region of southern Africa. Here it was common for adolescent girls to engage in a form of institutionalized friendship known as mummy-baby relations. In this arrangement, an older girl (the "mummy" or mother) formed an emotionally close relationship with a younger girl (the "baby"). The older girl provided gifts and advice about becoming a woman. The most important aspect of mummy-baby friendship was the exchange of affection and intimacy. This sometimes but not always had a genital sex component. The mummy-baby relationship allowed teen girls to learn about their developing sexuality without fear of pregnancy and in a context condoned by parents and teachers. In this pattern, both girls emphasized their femininity.

American history also provides examples of social patterns linking same-sex romantic relationships to femininity. In the 18th and 19th centuries, many American women formed romantic friendships with other women, often celebrating these passionate relationships in letters and poetry. "Ah, how I love you," President Grover Cleveland's sister Rose wrote to her friend Evangeline in 1890. "All my whole being leans out to you. . . . I dare not think of your arms" (cited in Goode, 1999, p. 33). After Rose's husband died, the two women spent their last years living together in Italy. At the time, women's romantic friendships were seen as reflecting womanly ideals of purity, love, and devotion (Faderman, 1981).

In other settings, women's same-sex relationships have been based on a distinction between a "masculine" and "feminine" partner. Among the Mohave Indians in North America, men and women enacted traditional, sex-typed social roles. It was possible, however, for a woman to perform male social roles and to take a wife without stigma. This wife, a traditionally feminine Mohave woman, was not considered homosexual or cross-gendered herself. If the relationship ended, the traditional ex-wife could pursue a heterosexual marriage (Blackwood, 1984, p. 35). In contemporary Sumatra, a similar pattern is found. The term tomboi (from the English word "tomboy") is used to describe women who act in the manner of men and are erotically attracted to feminine women. Tombois "construct their actions and desire for women on the model of masculinity" (Blackwood, 1999, p. 189). The female sexual partners of these tombois have no special designation or label; they are simply considered women. In America in the 1950s, an urban working-class subculture of lesbians developed based on relationships between a

masculine ("butch") and feminine ("femme") partner (e.g., Davis & Kennedy, 1989). To fit into this subculture, a woman had to assume one of these two roles. The point of all these examples is that the links among masculinity, femininity, and women's sexual orientation are variable rather than constant across cultures and historical periods. Far from holding the key to understanding women's sexual orientation, the adoption of masculine or feminine characteristics may reflect prevailing cultural norms and values.

*Personal Identity is Not Inevitably Linked to Sexual Attraction and Behavior*

In America today, a central component of sexual orientation is an individual's sense of personal identity as a lesbian, a bisexual, or a heterosexual (D'Augelli & Patterson, 1995). Many scientific studies of sexual orientation classify participants on the basis of their self-reported identity, for instance, by asking women to check "heterosexual," "lesbian," or "bisexual" on a questionnaire. The process of recognizing and coming to terms with one's sexual identity ("coming out") is an important focus of research on homosexuality. Personal identity is a core ingredient in sexual orientation in our society.

Yet there is ample documentation that same-sex attractions and behaviors are not inevitably or inherently linked to one's identity. As one example, the romantic friendships between women that flourished in the 18th and 19th centuries were socially acceptable and had no implications for a woman's identity (Faderman, 1981). As the 20th century unfolded, however, social attitudes about these relationships changed and the identity of "lesbian" emerged. Faderman (1991) explained that

sexual categories . . . can be dependent on a broad range of factors that are extraneous to the "sexual drive." . . . Love between women, especially those of the middle class, was dramatically metamorphosed from romantic friendships [into! "lesbianism" once the sexologists formulated the concept, economic factors made it possible for large numbers of women to live independently of men, and mobility allowed many women to travel to places where they might meet others who accepted the lesbian label, (p. 303)

Historians contend that the creation of "homosexual" and "heterosexual" as defining identities is a relatively recent development (e.g., Katz, 1995).

Anthropological researchers also describe cultures in which women's same-sex relationships are unrelated to their sense of identity. In an article titled, "What's Identity Got to Do With It?" Wekker (1999, p. 120) challenged the Western belief that one's sexual identity is "the core of

our being." She described a widespread institution among Creole working-class women in Suriname called *mati*. "*Mati* . . . are women who engage in sexual relationships with men and with women, either simultaneously or consecutively, and who conceive of their sex acts in terms of behavior" not identity (Wekker, 1999, p. 120). This socially accepted arrangement is made possible by the fact that most Creole women own or rent their own homes and are single heads of household. Wekker cautioned against the tendency to assume that concepts based on the experiences of women in contemporary Western cultures are relevant to women in other cultures. Although many Americans assume that personal identity as lesbian, bisexual, or heterosexual is an essential component of sexual orientation, this may not be true in other social contexts.

#### *Sex Acts Do Not Necessarily Determine a Woman's Sexual Orientation*

Many people, both researchers and the lay public, define lesbians as women who have sex with other women. Wekker (1999, p. 120), for example, rejected identity as a core component of sexual orientation and proposed instead that the cross-cultural core of homosexuality is "sexual acts between same-gendered people." Muscarella (1999) urged evolutionary psychologists to replace ambiguous terms like "homosexuality" with a focus on homoerotic behavior, which he defined as "same-gender sexual behavior involving genital contact" (p. 11). Yet the role of overt sexual behavior in women's sexual orientation is not so simple as these proposals would suggest.

One problem is that, in some social contexts, women have been defined as inherently asexual and disinterested in sex. As Sandra Bern (1993, p. 86) noted, 19th-century American science and medicine viewed women as asexual, "completely lacking in sexual motivation until and unless they were stimulated by men." At that time, women's intimate friendships were viewed as pure, natural, and asexual (Faderman, 1981). It was thought that "sex" requires a penis. As a result, many people considered sex between women impossible. This view was to change as sexologists and Freudian psychoanalysts promoted the idea that women's passionate attachments were sexual.

Kendall (1999, p. 169) described a comparable situation in southern Africa. She found that early in the 20th century "long-term loving, intimate, and erotic relationships between women were normative in rural Lesotho and were publicly acknowledged and honored." Women were typically married to a man but also had a special friendship with a woman that was celebrated with a wedding-like feast. This tradition continues today in more informal relationships between women that frequently involve passionate kissing, oral sex, and other activities

Americans would define as erotic. Nonetheless, the women Kendall interviewed insisted that these were not sexual relationships, explaining that you cannot have sex unless someone has a penis. As in the case of American romantic friendships, a narrow definition of sex permitted wide latitude for women's erotic behavior with each other. "No [penis], no sex means that women's ways of expressing love, lust, passion, or joy in each other are neither immoral nor suspect" (Kendall, 1999, p. 167). In principle, these cultural variations in conceptions of sexuality are not an insurmountable obstacle for intrepid researchers seeking to study same-gender sex acts. Such researchers can inquire about women's specific behaviors, regardless of how they are labeled. Indeed, this is precisely what Kendall did.

A more difficult issue concerns passionate relationships between women that do not include genital sex. Researchers do not know what 19th-century romantic friends did together behind closed doors. For at least some women, these intense and caring relationships did not include overt sex acts. Miss M., one of the Victorian sexual inverts described by Ellis, rejected explicit sex in her relations with women, considering that it would have been a "sacrilege." She prided herself on suppressing sexual urges toward a partner. Ambiguity about sexual acts also surrounds the institution known as "Boston marriage" that flourished in late 19th-century New England (Faderman, 1981). In this arrangement, two women openly entered into a long-term same-sex relationship. They usually lived together and centered their emotional lives around women. More recently, Rothblum and Brehony (1993) described contemporary Boston marriages, which they defined as romantic but asexual relationships among American women who view themselves as lesbian. Are these relationships relevant to our understanding of women's sexual orientation, or should they be excluded because these couples do not engage in specific sex acts?

Feminist psychologist McCormick (1994) has questioned using sex acts as the basis for defining sexual orientation:

Because women's sexuality is socially constructed by men, contemporary sexologists are inclined to demand genital proof of sexual orientation. Before labeling her as bisexual or lesbian, most sex researchers expect a woman to have had genital relationships with other women. . . . [Yet] the absence of genital juxtaposition hardly drains a relationship of passion or importance, (p. 57)

In sum, definitions of what constitutes "sex" are variable. In cultures that view penile penetration as the gold standard of human sexuality, women's erotic relationships with other women may be viewed as non-sexual. In cultures that view genital behavior as defining sexual orien-



tation, deeply meaningful, enduring but overtly asexual relationships between women may not be seen as lesbian or as relevant to women's sexual orientation.

### *Power and Women's Sexual Orientation*

Sociocultural analyses demonstrate that the patterning of women's sexual orientation is linked to women's social status and personal autonomy. Blackwood's (1986) cross-cultural analysis is informative. She noted that cultures vary enormously in the extent of social regulation of women's lives and sexuality. In high-male-control societies, men have substantial influence over women's lives including their sexuality and reproduction. Marriage is required and a husband chosen by family members. In such cultures, same-sex relations between women tend to be informal, private, and unacknowledged. Khan (1997, p. 284) reported that in modern-day Pakistan, sex is a private matter. "If a woman refuses to get married . . . , she is effectively a pariah. If a married woman dallies with another woman, . . . there is little problem" so long as she is a good wife and mother.

In contrast, in more egalitarian societies, women have greater control over their lives and sexuality. Female-female relations are more common and may be formally recognized. For example, among some native groups in Australia, sexual activity between adolescent girls was an acknowledged and integral part of the social system. According to Blackwood (1986, p. 11), a girl formed a sexual relationship with her female cross-cousin, whose family would later give her their son to marry. As a result, the former girlfriends would become sisters-in-law. Another example would be the marriage-like relationships between women in Lesotho described earlier (Kendall, 1999). In other words, the visibility and patterning of women's same-sex relations is linked to women's position in society.

In human history, it has probably been typical for women's same-sex attachments to co-exist with heterosexual relationships, even in relatively egalitarian cultures. Marriage has often been an economic arrangement, a prerequisite for adult status, and the socially approved route to motherhood. We have already described several examples of women having relationships with both women and men. In 19th-century America, women's passionate friendships often occurred among married women. In the Mati tradition in Suriname, it was socially acceptable for women to have sexual relations with both men and women. In Lesotho, the special friendships of women co-existed with heterosexual marriage. "There is no tradition in Lesotho that permits or condones women or men remaining single; single persons are regarded

as anomalous and tragic. Thus women have no identity apart from that of the men to whom they are related" (Kendall, 1999, p. 162).

Only under certain social conditions is it possible for women to forego marriage and form intimate relationships exclusively with women. Important prerequisites include women's financial independence and the existence of supportive ideologies and institutions. In 19th-century America, long-term Boston marriages were possible among women who had careers and endorsed an ideology legitimating same-sex relationships. In 19th-century China, economic conditions in the south permitted thousands of young women to gain financial self-sufficiency as silk workers (Blackwood & Wieringa, 1999; Sankar, 1986). These women formed social institutions known as "sisterhoods." They lived in cooperative houses, provided mutual aid, and renounced ties to men through a haircutting ritual. Sexual relations between women were apparently common and accepted.

The point of these examples is that the patterning of women's sexual orientation is linked in important ways to women's social status and personal resources. Exclusive homosexuality for women requires a degree of financial and social independence from men. It is further facilitated by the existence of women's social institutions and by a supportive ideology. Although these conditions are a taken-for-granted fact of life for many American women today, in historical and cross-cultural perspective they are the exception rather than the rule.

In summary, we have reviewed research bearing on three main tenets of inversion theory and have shown that empirical evidence is at odds with each one. It is time for researchers to replace the inversion model and the image of the congenital mannish lesbian with a new framework that is more compatible with available scientific evidence.

### **An Alternative Perspective: The Intimate Careers Model**

A comprehensive analysis of women's sexual orientation should begin with empirically grounded generalizations about women's experiences. The cumulative record of research on women's sexual orientation supports three broad conclusions. First, there is no inevitable association between masculinity (variously defined) and women's sexual orientation. Associations may exist in particular cultural contexts but are not a necessary component of sexual orientation. Second, the impact of biological factors in determining women's sexual orientation appears to be weak or nonexistent. Third, cross-cultural and historical analyses demonstrate that women's erotic and romantic bonds can take diverse forms that are shaped by their social environment. These empirical generalizations are incompatible with turn-of-the century inversion theory

and its modern-day successors, but they are consistent with ideas proposed as part of scripting (e.g., Gagnon, 1990; Gagnon & Simon, 1973) and social construction perspectives on sexuality (e.g., Blumstein & Schwartz, 1990). We believe that these generalizations provide a useful starting point for understanding the development of women's sexual orientation.

In creating a new model of the development of women's sexual orientation, two additional issues merit consideration. One concerns how broadly versus narrowly theorists conceptualize homosexuality. The second concerns the centrality of intimate relationships for understanding women's sexual orientation.

#### *Narrow Versus Broad Conceptualizations of Homosexuality*

One challenge posed by the diversity of women's sexual and romantic experiences is deciding which same-sex experiences should be considered indicative of homosexuality. Within some contemporary lesbian communities, debates about who is and is not a "true" lesbian have been common, often centering on the question of whether some women are born lesbians and others choose to become lesbian (Golden, 1996).

Theorists have also confronted this issue. Early inversion theorists recognized that some female inverters had traditionally feminine attributes. They resolved this apparent contradiction to their theory by proposing that the genuine invert was the masculine woman who pursued other women; her feminine counterpart was not truly or fully inverted. In other words, they distinguished between "real" and "pseudo" homosexuality, using the woman's degree of masculinity as their criterion. This is a troubling solution because it enabled the theorists to discount the experiences of women who did not fit their theoretical model.

In addition, inversion theorists went to considerable lengths to defend certain common cultural practices against charges of homosexuality. In his book on *Sexual Inversion*, Havelock Ellis (1928) devoted an entire chapter to school girls' friendships. He noted that in many boarding schools in Italy and England, a majority of girls had intense friendships known as "flames" or "raves." Passionate friendships were also common among actresses and chorus girls. Ellis concluded that although "passionate friendships, of a more or less unconsciously sexual character are common . . . such cases are on the borderland of true sexual inversion, but they cannot be included within its region" (p. 219). The rationale for excluding these erotic experiences from the domain of homosexuality was not explained. Apparently, these relationships were exempt from being categorized as homosexual because they were so

widespread and, at least for the school girls, because the participants were youthful.

A more recent example of the dilemmas of categorizing women's experiences comes from Bern's EBE theory of sexual orientation. In this case, Bern excluded "political lesbians" from his analysis. According to Bern (1996, p. 331), some women "might choose for social or political reasons to center their lives around other women. This could lead them to avoid seeking out men for sexual or romantic relationships, to develop affectional and erotic ties to other women, and to self-identity as lesbians or bisexuals." Even though these women describe themselves as lesbian and have sexual relationships with other women, Bern considered them "beyond the formal scope" of his theory of sexual orientation. Bern did not discuss his criterion for excluding these women, but it presumably centered on their motivation for entering lesbian relationships, which is political rather than sexual.

In these examples, researchers have excluded from consideration same-sex experiences that do not fit their theoretical models without a corresponding scrutiny of heterosexual experiences that are equally problematic. So, although inversion theorists viewed feminine inverters as not fully lesbian, they did not address the possibility of masculine women in heterosexual relationships. Degree of masculinity/femininity was seen as relevant to categorizing lesbians but not heterosexual women. Similarly, Bern defined political lesbians as beyond the scope of his theory but did not make a similar exception for women who might be termed "economic heterosexuals," that is, heterosexual women who marry for financial security or social status rather than sexual passion. Personal motivation was relevant for classifying lesbians but not heterosexuals.

The issue of which same-sex behaviors and relationships should be included in investigations of women's sexual orientation and which should be ignored deserves closer consideration. It is assuredly the prerogative of theorists to delimit the scope of their analyses. Indeed, theories of sexual orientation may benefit from greater specification of the relevant population. On the other hand, there are reasons to be wary of overly narrow conceptualizations, especially when the criteria for exclusion are applied only to sexual minorities and not to heterosexuals. Muscarella (1999, p. 9) noted that many analyses of homosexuality dismiss "homosexual behavior attributed to any cause which is considered incidental: play (adolescent or adult), exploration, lack of opposite-sex partners, hazing, initiation rituals, intoxication, sexual frustration, prostitution, boredom, opportunism, curiosity, and mistakes." He continued, "the dismissal of homosexual behavior not associated with a predominantly homosexual orientation may be causing theorists to miss an

important and evolutionarily significant behavior pattern in human sexuality."

We agree. If, as Bern and others have suggested, some women can choose a lesbian life-style for ideological reasons and then develop satisfying emotional and erotic bonds with other women as a consequence, this surely reveals something important about the nature of women's sexuality and the development of sexual orientation. A scientific understanding of women's sexual orientation will be advanced by research and theories that consider the full range of women's same-sex and other-sex experiences.

#### *A Focus on Relationships as Central to Women's Sexual Orientation*

For many theorists, especially those taking male experiences as their model, sexual orientation is first and foremost about sex acts. We believe that researchers interested in women's sexual orientation should not necessarily give primacy to sex. Rather, it will be more fruitful to understand women's experiences in terms of the formation of pair bonds. These bonds can include varying combinations of sex, love, and caregiving (Peplau & Cochran, 1990). For some women and in some social contexts, sexual orientation may be primarily about eroticism and sexuality. For other women, intimacy and attachment may be more central.

Researchers with diverse theoretical orientations have suggested that love and intimacy are more important for understanding women's sexuality than men's sexuality (e.g., Golden, 1996; Weinrich, 1987). For example, evolutionary theorists Ellis and Symons (1990) reported that women's sexual fantasies were more personal and partner focused than men's fantasies. In research about the nature of sexual desire, social psychologists Regan and Berscheid (1996) found that heterosexual women gave greater emphasis to love, emotional intimacy, and romance than did heterosexual men. These comments are illustrative:

Woman: "Sexual desire is the longing to be *emotionally intimate* and to express love for another person."

Man: Sexual desire is "wanting someone . . . in a physical manner. No strings attached. Just for uninhibited *sexual intercourse*" (Regan & Berscheid, 1996, p. 116, italics in original).

Sociologists Blumstein and Schwartz (1990) commented:

For modern Western women, the recognition of love or admiration or the pleasure in companionship or deep friendship most often leads to erotic attraction and response. While women are not incapable of seeking sex for its own sake, this pattern of sexual behavior is relatively rare. . . . Our research indicates that it is overwhelmingly more common for the relationship (or the desire for such a relationship) to establish itself first, (p. 312)

Weinberg, Williams, and Pryor (1994, p. 7) made a similar point about male-female difference among the bisexuals they studied:

For men it was easier to have sex with other men than to fall in love with them. For women it was easier to fall in love with other women than to have sex with them.

In conceptualizing women's sexual orientation it is important to reject an exclusive focus on sex acts. We do not suggest that sexuality and eroticism are unimportant to women's sexual orientation. Rather, we think it essential to acknowledge that for some women, emotional intimacy may be more consequential for sexual orientation (Golden, 1996). A focus on the nature of women's relationships provides an approach that does not give primary weight to any single relationship component—sex, love, or caregiving.

#### *The Intimate Careers Model*

What metaphor can replace the inversion theorists' image of the congenital mannish lesbian? We propose thinking about the development of women's sexual orientation as analogous to career development. The pathways that lead one woman to be a preschool teacher, another to be a firefighter, and a third to be a sex researcher are diverse and multiply determined. So, too, are the developmental origins of a woman's sexual orientation.

We are using the concept of career in a way consistent with the work of the Chicago school of sociologists. According to Erving Goffman (1961, p. 127), a career is

any social strand of a person's course through life. . . . One value of the concept is its two-sidedness. One side is linked to internal matters held dearly and closely, such as image of self and felt identity; the other side concerns official position . . . and style of life and is part of the publicly accessible institutional complex. The concept of career, then, allows one to move back and forth between the personal and the public, between self and its significant society.

The term *intimate career* refers to the sequence and patterning of a person's intimate relationships across the lifespan. A key component is the sex of the person's partner(s). The career concept is neutral with regard to the relative contributions of sex, love, and nurturance in relationships and sexual orientation. The career analogy can inform how we think about the causes of women's sexual orientation.

*Historical changes.* A career perspective recognizes that relationship scripts, like the job categories available in a society, change over time, as does the social meaning attached to particular scripts. We have

already mentioned historical changes in the U.S. that led to the demise of women's romantic friendships and Boston marriages (Faderman, 1981). Writing about Lesotho, Kendall (1999) reported that the once-celebrated arrangement of women's special friendships declined in the 1950s due to the introduction of Western ideas and values, including homophobia. In the U.S., Gagnon (1990) suggested that the creation of visible urban gay and lesbian communities made the choice of a same-sex life-style more attractive to wider audiences:

This is particularly true among the young, who now know about gay and lesbian possibilities at an earlier age and who are better informed about the content of these life-styles. . . . Older women and men, including those formerly married and with children, more easily find a gay or lesbian commitment plausible. These enlistees [come] from a wider base of person with more various biographies and life experiences, (pp. 197-198)

Gagnon suggested that one consequence may be to increase the demographic and personality diversity of those participating in same-sex relations.

*Lifespan perspective.* The career analogy adds a valuable temporal dimension to thinking about women's sexual orientation. The factors shaping women's attractions and relationships vary across the life cycle. The role of sexual arousal and passion may be different in the relationships of adolescents, middle-age women, and older adults. Similarly, the social context of women's lives often changes as they age, for instance as a woman leaves her family of origin, gains a measure of economic independence, or is exposed to new cultural values. Research investigating women's sexual orientation from a lifespan perspective would be useful.

Efforts to understand women's lives across time also encourage a consideration of stability versus change in women's sexual orientation. Just as an occupational career may progress through a series of different jobs, so too, a woman's intimate career may be characterized by a succession of romantic attractions and relationships. The intimate career model encourages us to think about the ways in which individuals navigate among scripts over time. In our society, most women's lives are characterized by considerable continuity. After an initial period of exploring different partners, a woman may enter into a relatively long-term relationship pattern—a lifetime commitment to male or female partners. Other women, however, experience shifts and discontinuities (e.g., Blumstein & Schwartz, 1976; Kitzinger & Wilkinson, 1995; Rust, 1993). A same-sex romantic attachment in college may be followed by a heterosexual marriage; a formerly married woman may embark on an intimate relationship with a woman friend. Further research analyzing factors that contribute to stability versus change in women's sexual ori-

entation over time would be useful.

*Biological influences.* Biology may play a part in the development of both occupational and intimate careers, but biological influences are inevitably indirect. Teachers and firefighters may differ in physical strength and temperament, but these differences do not predetermine the women's occupations. Firefighters often come from families with other firefighters, however, this association may have as much to do with learning opportunities as with genetics. Similarly, biological factors do not influence women's sexual orientation directly or in the same way across cultures. In particular contexts, certain physical characteristics may be important. The American Indian women who adopted a male social role and married a woman may have had distinctive physical attributes such as exceptional strength or height. In contrast, the Victorian women in Boston marriages were probably indistinguishable from other women in their physical attributes, differing instead in their high levels of education, their atypical employment status, and their progressive ideas.

Two implications of the career model for biological research are noteworthy. First, efforts to identify biological contributions to women's sexual orientation need to specify more closely the relevant population. For example, some have speculated that biological factors may have a stronger influence on exclusive homosexuality than bisexuality (Bell, Weinberg, & Hammersmith, 1981, p. 216). Although this idea sounds plausible, it has not been tested explicitly and seems at odds with available evidence. Remember, for instance, that the impact of atypical prenatal hormone exposure was not to increase exclusive same-sex responsiveness, but rather to increase bisexuality (albeit among a small minority of women).

Second, our understanding of women's sexual orientation is hampered by a paucity of research about women's sexual desire and sexuality (Wallen, 1995). Coming from an evolutionary perspective, Symons (1979, p. 311) and others have commented on the "astonishing sexual plasticity of the human female" compared to the more rigid channeling of male sexuality. Unfortunately, a detailed analysis of female sexual plasticity or its implications for women's sexual orientation is lacking. Coming from an attachment theory perspective, Zeifman and Hazan (1997) proposed that the basic human design for heterosexual pairing involves a predictable sequence of initial sexual attraction followed at a later time by the development of attachment bonds. In other words, sexual desire creates the conditions for attachment and emotional intimacy. Yet reports of women's same-sex experiences often depict the reverse sequence, an initial close friendship that is transformed into an

erotic relationship. We suspect that some male-female relationships also begin as friendship and then blossom into romance. Currently, however, systematic investigations of the connections among sexuality and attachment or the sequencing of these phenomena in women's relationships are lacking. Insights from evolutionary psychology, endocrine research, and other biologically oriented disciplines may be helpful in advancing our understanding of these issues.

*Sociocultural influences.* Social contexts play a central role in occupational career development, determining the categories of jobs available, their entrance requirements, their pay and prestige. A person's social location on such dimensions as class, ethnicity, and education also influences his or her career options. This is equally true for intimate careers. One of the most profound ways in which society shapes sexual orientation is by providing the social identities, scripts, and institutions available to individuals. Savin-Williams (1995, p. 166) highlighted this point when he defined sexual identity as "an individual's enduring sense of self as a sexual being that fits a culturally created category and accounts for one's sexual fantasies, attractions, and behavior." Two directions for sociocultural research appear especially valuable.

One direction is to map more extensively the intimate career patterns of women both in Western cultures and around the globe. Studies of dating, marriage, and the family have described many aspects of women's heterosexual careers, although they have seldom explicitly inquired about the factors that initiate and sustain a woman's commitment to male partners and a heterosexual identity (Wilkinson & Kitzinger, 1993). We know even less about the patterning of same-sex relationships. Illustrative studies describe same-sex romances among American college women in the 1920s (Davis, 1929) and 1990s (Diamond, 1998), butch-femme relationships among working class women in the 1950s (Davis & Kennedy, 1989), the relationship histories of lesbian feminists from the 1970s to 1990s (Stein, 1997), and the experiences of bisexual women in San Francisco (Weinberg et al., 1994). Rich description, including both quantitative and qualitative approaches, is a crucial first step in good science, and there is much to be learned about the array of intimate careers among contemporary women.

The most serious gap in existing research are analyses of the forces that lead individual women into different intimate career paths. At the societal level, we know that women are constrained in this process by the range of cultural options available, by their social and economic status, and by prevailing ideologies. At the individual level, research indicates that biological factors do not determine women's intimate careers in any direct way. Gender nonconformity in childhood may be relevant

to the experiences of some sexual minority women but does not offer a general explanation of the development of women's sexual orientation. Psychoanalytic and other theorists have suggested that childhood experiences in the family are important, but efforts to test specific hypotheses linking family patterns to sexual orientation have not been successful (Bell et al., 1981). What factors do make a difference? Currently, we know surprisingly little about the personal and social factors involved. The challenge for those interested in the development of women's sexual orientation is to provide more adequate answers to this perplexing question. The intimate careers perspective offers a promising new direction.

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