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Exotic Becomes Erotic: Interpreting the Biological Correlates of Sexual Orientation

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Although biological findings currently dominate the research literature on the determinants of sexual orientation, biological theorizing has not yet spelled out a developmental path by which any of the various biological correlates so far identified might lead to a particular sexual orientation. The Exotic-Becomes-Erotic (EBE) theory of sexual orientation (Bem, 1996) attempts to do just that, by suggesting how biological variables might interact with experiential and sociocultural factors to influence an individual's sexual orientation. Evidence for the theory is reviewed, and a path analysis of data from a large sample of twins is presented which yields preliminary support for the theory's claim that correlations between genetic variables and sexual orientation are mediated by childhood gender nonconformity.

KEY WORDS: sexual orientation; homosexuality; heterosexuality; erotic orientation; sexuality; path analysis; genetic correlates.

INTRODUCTION

Biological findings currently dominate the research literature on the determinants of sexual orientation. Reports of correlations between various biological variables and homosexuality appear regularly in the professional journals and, just as regularly, receive instant replay in the mass media. As a result, some researchers, many journalists, and sizable segments of the lesbian/gay/bisexual community have rushed to embrace the conclusion that a homosexual orientation is coded in the genes, caused by prenatal hormones, or determined by brain neuroanatomy. Except for the reparative therapists, most of the personality, clinical, and developmental psychologists and psychiatrists who once dominated the discourse on

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this topic have fallen conspicuously silent. Many have probably become closet converts to biology because they cannot point to a coherent body of evidence that supports a developmental, experience-based account of sexual orientation. The general public is not far behind: In 1983, only 16% of Americans believed that "homosexuality is something that people are born with" (Moore, 1993); by 2000, that figure had more than doubled to 35% (Reuters, 2000).

I find at least two aspects of the current zeitgeist scientifically problematic. The first is the premature rush to interpret correlation as causation. In the absence of any theory of—let alone, evidence for—a developmental pathway from the biological markers to sexual orientation, such an interpretation is still a leap of faith. At best, there seems to be an implicit, primitive gender-inversion theory of homosexuality: If, for example, a biological characteristic that is more prevalent in gay men than in heterosexual men happens also to be more prevalent in women than in men, then, ipso facto, that is somehow deemed to "explain" the homosexual orientation. It was my dissatisfaction with this default "theory" that challenged me to spell out a specific developmental process in which biological variables would interact with experiential and sociocultural factors to determine an individual's sexual orientation. My Exotic-Becomes-Erotic (EBE) theory of sexual orientation (Bem, 1996) was the result of that effort.

The second problematic aspect of the current zeitgeist is that it narrowly focuses on the question "What causes homosexuality?" This framing of the inquiry implicitly presumes that heterosexuality is so well understood, so obviously the "natural" evolutionary consequence of reproductive advantage, that only deviations from it require explanation. Freud himself did not so presume: "[Heterosexuality] is also a problem that needs elucidation and is not a self-evident fact based upon an attraction that is ultimately of a chemical nature" (Freud, 1905/1962, pp. 11, 12).

I agree with Freud. In fact, I would go further and assert that even the use of gender as the basis for choosing a sexual partner is a problem that needs elucidation. Accordingly, EBE theory attempts to account for three major observations: First, most men and women in our culture have an exclusive and enduring erotic preference for either males or females; gender is, in fact, the overriding criterion for most people's erotic choices. Second, most men and women in our culture have an exclusive and enduring erotic preference for persons of the opposite sex. And third, a substantial minority of men and women have an exclusive and enduring erotic preference for persons of the same sex. In seeking to account for these observations, EBE theory provides a single unitary explanation for both opposite-sex and same-sex desire—and for both men and women. In addition, the theory seeks to account for sex differences in sexual orientation and for departures from the modal patterns, such as bisexual orientations, orientations that are not enduring but fluid and changeable, and sexual orientations that are not even based on the gender of potential partners.

OVERVIEW OF EBE THEORY

The central proposition of EBE theory is that individuals can become erotically attracted to a class of individuals from whom they felt different during childhood. Figure 1 shows how this phenomenon is embedded in the overall sequence of events that leads to an individual's erotic attractions—the component of sexual orientation addressed by the theory. The sequence begins at the top of the figure with Biological Variables (labeled **A**) and ends at the bottom with Erotic Attraction (labeled **F**).

A → B. According to the theory, biological variables such as genes or prenatal hormones do not code for sexual orientation per se but for childhood temperaments, such as aggression and activity level.

B → C. A child's temperaments predispose him or her to enjoy some activities more than other activities. One child will enjoy rough-and-tumble play and competitive team sports (male-typical activities); another will prefer to socialize quietly or play jacks or hopscotch (female-typical activities). Children will also prefer to play with peers who share their activity preferences; for example, the child who enjoys baseball or football will selectively seek out boys as playmates. Children who prefer sex-typical activities and same-sex playmates are referred to as gender conforming; children who prefer sex-atypical activities and opposite-sex playmates are referred to as gender nonconforming.

C → D. Gender-conforming children will feel different from opposite-sex peers, and gender-nonconforming children will feel different from same-sex peers.

D → E. These feelings of being different produce heightened physiological arousal. For the male-typical child, it may be felt as antipathy or contempt in the presence of girls ("girls are yucky"); for the female-typical child, it may be felt as timidity or apprehension in the presence of boys. A particularly clear example is the "sissy" boy who is taunted by male peers for his gender nonconformity and, as a result, is likely to experience the strong physiological arousal of fear and anger in their presence. However, the theory claims that every child—conforming or nonconforming—experiences heightened, nonspecific physiological arousal in the presence of peers from whom he or she feels different. For most children, this arousal in neither affectively toned nor consciously experienced.

E → F. Regardless of the specific source or affective tone of the childhood arousal, it is subsequently transformed into erotic attraction. Steps **D → E** and **E → F** thus encompass specific psychological mechanisms that transform exotic into erotic (**D → F**).

It is important to emphasize that Fig. 1 is not intended to describe an inevitable, universal path to sexual orientation but the modal path followed by most men and

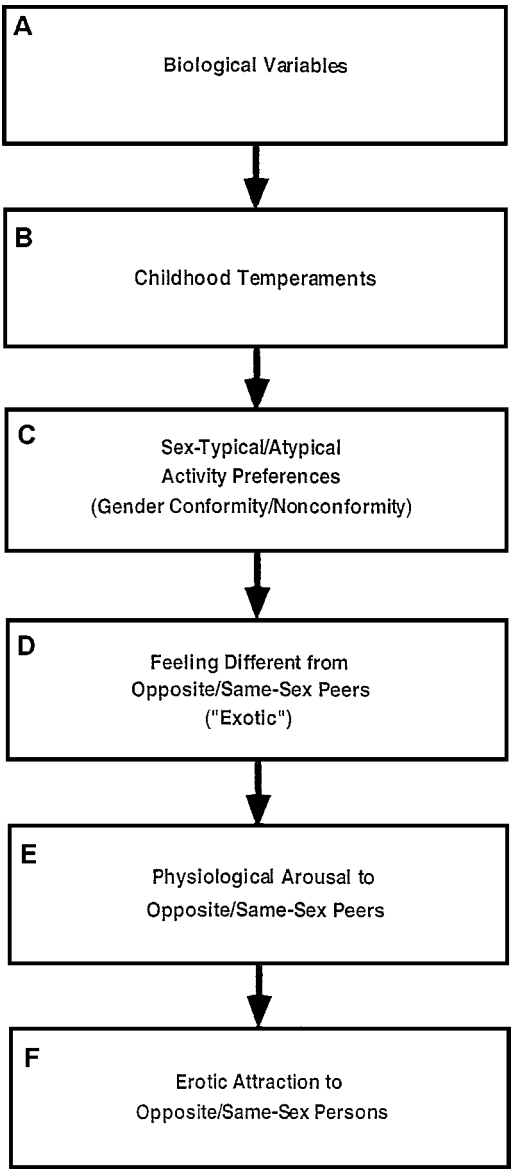

Fig. 1. The temporal sequence of events leading to sexual orientation for most men and women in a gender-polarizing culture.

women in a gender-polarizing culture like ours, a culture that emphasizes the differences between the sexes by pervasively organizing both the perceptions and realities of communal life around the male–female dichotomy (Bem, 1993).

EVIDENCE FOR THE THEORY

Exotic Becomes Erotic (D → F)

The central proposition that individuals can become erotically attracted to a class of individuals from whom they felt different during childhood is very general and transcends erotic orientations that are based on gender. For example, a light-skinned person could come to eroticize dark-skinned persons through one or more of the processes described by the theory. To produce a differential erotic attraction to one sex or the other, however, requires that the basis for feeling different must itself differentiate between the sexes; that is, to arrive at a sex-based erotic orientation, an individual must feel different for sex-based or gender-related reasons. Simply being lighter-skinned, poorer, more intelligent, or more introverted than one's childhood peers does not produce the kind of feeling different that produces differential homoerotic or heteroerotic attraction.

Data consistent with this analysis comes from an intensive, large-scale interview study conducted in the San Francisco Bay Area by the Kinsey Institute for Sex Research (Bell *et al.*, 1981a). Using retrospective reports from adult respondents, the investigators compared approximately 1,000 gay men and lesbians with 500 heterosexual men and women to test several hypotheses about the development of sexual orientation. The study (hereinafter, the "San Francisco study") yielded virtually no support for current experience-based theories of sexual orientation, including those based on processes of learning or conditioning or on family psychodynamics.

The study did find, however, that 71% of the gay men and 70% of the lesbians in the sample reported that they had felt different from their same-sex peers during childhood, a feeling that was sustained throughout childhood and adolescence for most respondents. When asked in what ways they had felt different, they overwhelmingly cited gender-related reasons. Gay men were most likely to say that they had not liked boys' sports; lesbians were most likely to say that they had been more masculine than other girls were and had been more interested in sports than other girls. In contrast, fewer than 8% of heterosexual men or women said that they had felt different from same-sex childhood peers for gender-related reasons. Those who had felt different from their peers tended to cite such reasons as having been poorer, more intelligent, or more introverted. (All statistical comparisons between gay and heterosexual respondents were significant at $p < 0.0005$.)

Several other studies have also reported that gay men and lesbians recall having felt different from same-sex peers on gender-related characteristics during

childhood (e.g., Newman and Muzzonigro, 1993; Savin-Williams, 1998; Telljohann and Price, 1993; Troiden, 1979). The major weakness in all these studies, including the San Francisco study, is that they rely on adults' retrospective reports of childhood feelings. On the other hand, the respondents in some of the studies were relatively close in time to their childhood years; in one study, for example, 88% of gay male youths as young as 14 years reported having felt different from other boys on gender-related characteristics throughout their childhood years (Savin-Williams, 1998). Moreover, the link between childhood gender nonconformity and sexual orientation (described in the next section) has been confirmed in over 50 studies, including prospective ones (Bailey and Zucker, 1995; they also discuss the retrospective problem at length).

Gender Conformity and Nonconformity: The Antecedents of Feeling Different (C → D)

Feeling different from one's childhood peers can have any of several antecedents, some common, some idiosyncratic. The most common antecedent is gender polarization. Virtually all human societies polarize the sexes to some extent, setting up a sex-based division of labor and power, emphasizing or exaggerating sex differences, and, in general, superimposing the male–female dichotomy on virtually every aspect of communal life (Bem, 1993). These gender-polarizing practices ensure that most boys and girls will grow up feeling different from opposite-sex peers and, hence, will come to be erotically attracted to them later in life. This, according to the theory, is why gender becomes the most salient category and, hence, the most common criterion for selecting sexual partners in the first place and why heteroeroticism is the modal preference across time and culture. Thus, the theory provides a culturally based alternative to the assumption that evolution must necessarily have programmed heterosexuality into the species for reasons of reproductive advantage.

Obviously heterosexual behavior is reproductively advantageous, but it does not follow that it must therefore be sustained through genetic transmission. As long as prevailing environments support or promote a reproductively successful behavior sufficiently often, it will not necessarily get programmed into the genes by evolution. This is true even in species whose sexual choices are far more "hard-wired" than our own. For example, it is presumably reproductively advantageous for ducks to mate with other ducks, but as long as most baby ducklings encounter other ducks before they encounter a member of some other species (including ethologists), evolution can simply implant the imprinting process itself into the species rather than the specific content of what, reproductively speaking, needs to be imprinted (Hess and Petrovich, 1977). Analogously, because most cultures ensure that boys and girls will see each other as exotic, it would be sufficient for evolution to implant an exotic-becomes-erotic process into our species rather than

Table I. Percentage of Respondents Reporting Gender-Nonconforming Preferences and Behaviors During Childhood

	Men		Women	
Response	Gay ($n = 686$)	Heterosexual ($n = 337$)	Lesbian ($n = 293$)	Heterosexual ($n = 140$)
Had not enjoyed sex-typical activities	63	10	63	15
Had enjoyed sex-atypical activities	48	11	81	61
Atypically sex-typed (masculinity/femininity)	56	8	80	24
Most childhood friends were opposite sex	42	13	60	40

Note. Percentages have been calculated from the data given in Bell *et al.* (1981b, pp. 74, 75, 77). All chi-square comparisons between gay and heterosexual subgroups are significant at $p < 0.0001$.

heterosexuality per se. In fact, an exotic-becomes-erotic process is actually a built-in component of sexual imprinting in some species. For example, Japanese quail reared with their siblings later prefer their slightly different-appearing cousins to their own siblings (Bateson, 1978). This has been interpreted as a mechanism that prevents inbreeding—a biologically promoted incest taboo.

How, then, does a child come to feel different from same-sex peers? As cited earlier, the most common reasons given by gay men and lesbians in the San Fransisco study for having felt different from same-sex peers in childhood were sex-atypical preferences and behaviors in childhood—gender nonconformity. In fact, in the path analyses of the San Francisco study, childhood gender conformity or nonconformity was not only the strongest but the only significant childhood predictor of later sexual orientation for both men and women (Bell *et al.*, 1981a). As Table I shows, the effects are large and significant. For example, compared with heterosexual men, gay men were significantly less likely to have enjoyed boys' activities (e.g., baseball and football) during childhood, more likely to have enjoyed girls' activities (e.g., hopscotch, playing house, and jacks), and less likely to rate themselves as having been masculine. These were the three variables that defined gender nonconformity in the study. Additionally, gay men were more likely than heterosexual men to have had girls as childhood friends. The corresponding comparisons between lesbian and heterosexual women are also large and significant.

It is also clear from the table that relatively more women than men reported enjoying sex-atypical activities and having opposite-sex friends during childhood. As these data confirm, enjoying male-typical activities is common for a girl in our society, implying that being a tomboy is not sufficient by itself to cause her to feel different from other girls. In fact, we see in the table that the difference between the percentages of lesbians and heterosexual women who report having enjoyed

boys' activities during childhood (81% vs. 61%, respectively) is less than half the size of the difference between them in their aversion to girls' activities (63% vs. 15%). Moreover, this latter difference is virtually identical to that between gay men and heterosexual men in their reported childhood aversions to boys' activities (63% vs. 10%).

As noted in the previous section, the San Francisco study does not stand alone. A meta-analysis of 48 studies confirmed that gay men and lesbians are more likely than heterosexual men and women to recall gender-nonconforming behaviors and interests in childhood (Bailey and Zucker, 1995, p. 49). As the authors observed, "these are among the largest effect sizes ever reported in the realm of sex-dimorphic behaviors." Prospective longitudinal studies come to the same conclusion. In the largest of these, 75% of gender-nonconforming boys became bisexual or homosexual in later years compared with only 4% of gender-conforming boys (Green, 1987). In six other prospective studies, 63% of gender-nonconforming boys later had homosexual orientations (Zucker, 1990). Currently there are no prospective studies of gender-nonconforming girls.

How Does Exotic Become Erotic? (D → E → F)

EBE theory proposes that exotic becomes erotic because feeling different from a class of peers in childhood produces heightened nonspecific physiological arousal (**D → E**), which is subsequently transformed into erotic attraction (**E → F**). To my knowledge, there is no direct evidence for the first step in this sequence beyond the well-documented observation that novel ("exotic") stimuli produce heightened physiological arousal in many species, including our own (Mook, 1999); filling in this empirical gap in EBE theory must await future research. In contrast, there are at least three mechanisms that can potentially effect the second step, transforming generalized arousal into erotic attraction (Bem, 1996). Only one of these, the extrinsic arousal effect, is discussed here.

In his first-century Roman handbook, *The Art of Love*, Ovid advised any man who was interested in sexual seduction to take the woman in whom he was interested to a gladiatorial tournament, where she would more easily be aroused to passion. However, he did not say why this should be so. A contemporary version of Ovid's claim was introduced by Walster (Berscheid and Walster, 1974; Walster, 1971), who suggested that it constitutes a special case of the 2-factor theory of emotion by Schachter and Singer (1962). This theory states that the physiological arousal of our autonomic nervous system provides the cues that we feel emotional but that the more subtle judgment of *which* emotion we are feeling often depends on our cognitive appraisal of the surrounding circumstances. According to Walster, then, the experience of erotic desire results from the conjunction of physiological arousal and the cognitive causal attribution (or misattribution) that the arousal is elicited by a potential sexual partner.

Although not all investigators agree that it arises from a cognitive attribution process, there is now extensive experimental evidence that an individual who has been physiologically aroused will show heightened sexual responsiveness to an appropriate target person. In one set of studies, male participants were physiologically aroused by running in place, by hearing an audio tape of a comedy routine, or by hearing an audio tape of a grisly killing (White *et al.*, 1981). No matter how they had been aroused, these men reported more erotic interest in a physically attractive woman than did men who had not been aroused. This effect has also been observed physiologically. In two studies, preexposure to a disturbing (nonsexual) videotape subsequently produced greater penile tumescence in men and greater vaginal blood volume increases in women when they watched an erotic videotape than did preexposure to a nondisturbing videotape (Hoon *et al.*, 1977; Wolchik *et al.*, 1980).

In other words, generalized physiological arousal, regardless of its source or affective tone, can subsequently be experienced as erotic desire. At that point, it *is* erotic desire. My proposal, then, is that an individual's protracted and sustained experience of feeling different from same- or opposite-sex peers throughout childhood and adolescence produces a correspondingly sustained physiological arousal that gets eroticized when the maturational, cognitive, and situational factors coalesce to provide the critical defining moment.

The precise timing of this moment, however, is influenced by several factors, including actual sexual experience with opposite- and same-sex peers. A recent review suggests that, in general, men and women recall their first sexual attractions, whether same-sex or opposite-sex, as occurring when they were between 10 and 10.5 years of age (McClintock and Herdt, 1996). Nevertheless, social norms and expectations inevitably influence an individual's awareness and interpretation of early arousal. Most individuals in our culture are primed to anticipate, recognize, and interpret opposite-sex arousal as erotic or romantic attraction and to ignore, repress, or differently interpret comparable same-sex arousal. We should also expect to see secular changes and cohort effects. For example, the heightened visibility of gay men and lesbians in our society is now prompting individuals who experience same-sex arousal to recognize it, label it, and act on it at earlier ages than in previous years (Dubé, 1997; Fox, 1995; Savin-Williams, 1995, 1998).

The Biological Connection (A → F) versus (A → B)

As outlined in Fig. 1, EBE theory proposes that to the extent biological factors such as the genotype, prenatal hormones, or brain neuroanatomy influence an individual's later sexual orientation, they do so only indirectly, by intervening earlier in the chain of events to influence a child's preference for sex-typical or sex-atypical activity and peer preferences—his or her gender conformity or nonconformity.

More specifically, the theory specifies that any link between, say, the genotype and gender nonconformity (**A → C**) is composed of two parts: a link between

the genotype and childhood temperaments (**A** → **B**) and a link between those temperaments and gender nonconformity (**B** → **C**). This implies that the mediating temperaments should possess three characteristics: First, they should be plausibly related to those childhood activities that define gender conformity and nonconformity. Second, because they manifest themselves in sex-typed preferences, they should show sex differences. And third, because they are hypothesized to derive from the genotype, they should have significant heritabilities. (For general discussions and reviews of childhood temperaments, see Goldsmith *et al.*, 1987; Kohnstamm *et al.*, 1989.)

One likely candidate is aggression and its benign cousin, rough-and-tumble play. Gay men score lower than heterosexual men on measures of childhood aggression (Blanchard *et al.*, 1983), and parents of gender-nonconforming boys specifically rate them as having less interest in rough-and-tumble play than do parents of gender-conforming boys (Green, 1976). Second, the sex difference in aggression during childhood is one of the largest psychological sex differences known (Hyde, 1984). Rough-and-tumble play in particular is more common in boys than in girls (DiPietro, 1981; Fry, 1990; Moller *et al.*, 1992). And third, individual differences in aggression have a large heritable component (Rushton *et al.*, 1986).

Another likely candidate is activity level, considered to be one of the basic childhood temperaments (Buss and Plomin, 1975, 1984). Like aggression, differences in activity level would also seem to characterize the differences between male-typical and female-typical play activities in childhood. Moreover, gender-nonconforming boys and girls are lower and higher on activity level, respectively, than are control children of the same sex (Bates *et al.*, 1973, 1979; Zucker and Green, 1993). Second, the sex difference in activity level is as large as it is for aggression. Even before birth, boys in utero are more active than girls are (Eaton and Enns, 1986). And third, individual differences in activity level have a large heritable component (Plomin, 1986; Rowe, 1997).

A Test of the EBE Model

There have now been several studies showing a correlation between an individual's sexual orientation and his or her genotype. In one, a sample of 115 gay men who had male twins, 52% of identical twin brothers were also gay compared with only 22% of fraternal twin brothers and 11% of adopted brothers (Bailey and Pillard, 1991). In a comparable sample of 115 lesbians, 48% of identical twin sisters were also lesbians compared with only 16% of fraternal twin sisters and 6% of adopted sisters (Bailey *et al.*, 1993). A subsequent study of nearly 5,000 twins who had been systematically drawn from a twin registry confirmed the significant heritability of sexual orientation for men but not for women (Bailey

and Martin, 1995). Finally, an analysis of families in which there were two gay brothers, suggested a correlation between a homosexual orientation and the inheritance of genetic markers on the X chromosome (Hamer and Copeland, 1994; Hamer *et al.*, 1993).

But these same studies also provided evidence for the link proposed by EBE theory between an individual's genotype and his or her childhood gender nonconformity. For example, in the 1991 study of male twins, the correlation on gender nonconformity between gay identical twins was as high as the reliability of the nonconformity measure would permit, 0.76, ($p < 0.0001$), compared with a nonsignificant correlation of only 0.43 between gay fraternal twins (Bailey and Pillard, 1991). This implies that even when sexual orientation is held constant, there is a significant correlation between the genotype and gender nonconformity. Similarly, the 1993 family study found that gay brothers who shared the same genetic markers on the X chromosome were more alike on gender nonconformity than were gay brothers who did not (Hamer and Copeland, 1994; Hamer *et al.*, 1993). Finally, childhood gender nonconformity was significantly heritable for both men and women in the large twin registry study—even though sexual orientation itself was not significantly heritable for the women (Bailey and Martin, 1995).

Because this twin registry study is based on a very large sample and includes heterosexual as well as bisexual and homosexual individuals, the data can be used in a path analysis to test the EBE model against the competing default model that the genotype is more directly linked to sexual orientation or is linked via some alternative but unspecified path. In particular, the EBE model predicts that any correlation between the genotype and sexual orientation is mediated by gender nonconformity and, hence, should vanish when gender nonconformity is entered into the path model. In contrast, the default model predicts that the correlation between the genotype and sexual orientation should remain unaffected when gender nonconformity is entered into the path model.

The path analysis presented here is based on the fact that monozygotic twins will be more similar than dizygotic twins on any trait with nonzero heritability. This is equivalent to saying that zygosity is itself correlated with trait similarity across pairs of twins; the higher the heritability of the trait, the higher the correlation. Accordingly, the unit of analysis here is the twin pair, and each variable is a measure of the pair's similarity on the three variables at issue. (The variables are actually all coded in the direction of dissimilarity.) Genetic similarity (zygosity) is coded as 0 for monozygotic twin pairs and as 1 for dizygotic pairs. The similarity of a pair's childhood gender nonconformity is the absolute value of the difference between their scores on a multi-item scale of childhood gender nonconformity; and, the similarity of their sexual orientations is the absolute value of the difference between their scores on the 7-point Kinsey scale of sexual orientation, which ranges from 0 = *exclusively heterosexual* to 6 = *exclusively homosexual*. A full description of

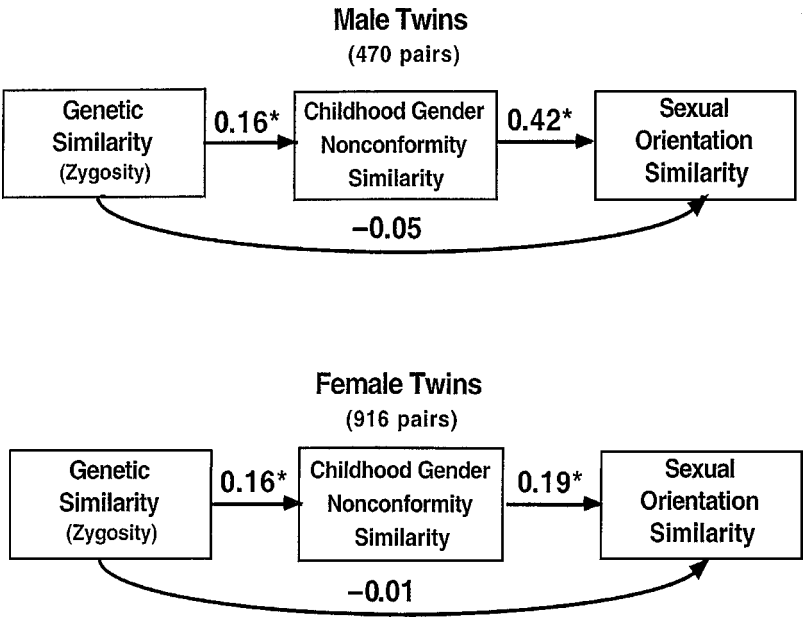

Fig. 2. Path coefficients between genetic similarity (zygosity), childhood gender nonconformity similarity, and sexual orientation similarity for male and female twin pairs. $^{*}p < 0.001$.

the twin sample and the methodology of the study appears elsewhere in this issue (Dunne *et al.*, 2000).[2]

As shown in Fig. 2, the pattern of path coefficients is consistent with the EBE model for both male and female twin pairs: For both sexes, there is a significant path between the genotype and childhood gender nonconformity and a further significant path between childhood gender nonconformity and sexual orientation, but there is no remaining, direct link between the genotype and sexual orientation.[3]

[2]Michael Bailey has generously provided the relevant data for these path analyses and, even more generously, given me permission to publish them here even though he and his collaborators have not yet published their own genetic analyses of these data.

[3]To ensure that this pattern of results is not simply an artifact of differing distributions of the two continuous variables (childhood gender nonconformity similarity and sexual orientation similarity), a logistic analysis (Darlington, 1990) was also performed in which these two variables were first transformed into dichotomous variables with identical distributions. Following Dunne *et al.* (1999), a twin pair was considered concordant for sexual orientation if both twins were either exclusively heterosexual (Kinsey scores of 0) or not (Kinsey scores greater than 0). The difference scores on childhood gender nonconformity were then dichotomized so that the number of concordant pairs on this variable equalled the number of pairs who were concordant on sexual orientation. In this way, both variables were given "an equal chance" of being correlated with genetic similarity. This alternative analysis yielded the same correlational patterns and the same significance levels as the analysis depicted in Fig. 2.

Other Biological Correlates

In addition to the genotype, prenatal hormones and brain neuroanatomy have also been correlated with sexual orientation in some studies (for summaries, reviews, and critiques see Bailey, 1995; Bem, 1996; Byne and Parsons, 1993; Zucker and Bradley, 1995). But these correlations—even if they turn out to be replicable and not artifactual—do not necessarily controvert the EBE account. Any biological factor that correlates with one or more of the intervening processes proposed by EBE theory could also emerge as a correlate of sexual orientation. For example, any neuroanatomical feature of the brain that correlates with childhood aggression or activity level is likely to emerge as a difference between gay men and heterosexual men, between women and men, and between heterosexual women and lesbians. Even if EBE theory turns out to be wrong, the more general point—that a mediating personality variable could account for observed correlations between biological variables and sexual orientation—still holds.

INDIVIDUAL DIFFERENCES

As noted earlier, Fig. 1 is not intended to describe an inevitable, universal path to sexual orientation but only the modal path followed by most men and women in a gender-polarizing culture like ours. Individual differences, including apparent exceptions to the theory, can arise in a number of ways. First, of course, the theory could simply be wrong or incomplete in fundamental ways. But some of the apparent exceptions to the sequence of events laid out in Fig. 1 are arguably theory-consistent variations.

One such possibility is that some individuals enter the EBE path in the middle of the sequence rather than at the beginning. For example, some children may come to feel different from same-sex peers not because of a temperamentally induced preference for sex-atypical activities but because of more idiosyncratic factors, such as a physical disability, an illness, or an atypical lack of contact with same-sex peers. Some of the gay men and lesbians in the San Francisco study reported that although they had been gender conforming in their childhood behaviors, they still felt different from their same-sex peers for gender-related reasons. Moreover, even the sex-typical lesbians in the study were more likely than heterosexual women to report that most of their friends in grade school had been boys. And, consistent with the subsequent steps in the EBE path, this was the strongest predictor of homosexual involvements in adolescence and their homosexual orientation in adulthood.

Cultural factors can also enter to create individual differences that appear to be exceptions to the EBE model. For example, some children might have an activity preference that is gender neutral or even sex typical in the wider culture but gender deviant in their own peer subculture. A contemporary example is the

boy who is a clever computer hacker: He would be considered a "regular guy" or even a hero in some male subcultures but a gender-deviant "nerd" in others. Similarly, a child can be permissibly gender nonconforming in some ways—and hence not feel different from same-sex peers—if he or she is gender conforming in other ways that are more gender-defining in his or her subculture. And finally, changes in the wider culture can produce cohort effects; behaviors that are gender nonconforming in one cohort can become more or less so in a later cohort.

For some individuals, the erotic attractions predicted by EBE theory might be supplemented or even superseded by erotic attractions acquired after adolescence. For example, the same-sex eroticism of most of the bisexual men and women in the San Francisco study appeared to be a socially learned, post-adolescent "add-on" to an already established heterosexual orientation. Not surprisingly, these bisexual respondents differed from their exclusively homosexual counterparts on some of the major antecedent variables as well. For example, the path correlation between gender nonconformity and same-sex eroticism was only 0.18 for the bisexual women, but it was 0.62 for the exclusively homosexual women. In fact, 80% of the bisexual women and 75% of the bisexual men in the study reported that as children they had been sex-typically feminine or masculine, respectively.

Finally, some women who would otherwise be predicted by the EBE model to have a heterosexual orientation 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-identify as lesbians or bisexuals (Kitzinger, 1987), which in turn leads to the topic of sex differences.

SEX DIFFERENCES

One of the more audacious claims made for EBE is that it provides a single unitary explanation for both opposite-sex and same-sex desire—and for both men and women. Not everyone is convinced, however, and I have been challenged to defend the theory against the charge that it is androcentric: valid for men, perhaps, but not for women (Bem, 1998; Peplau *et al.*, 1998).

To be sure, there is now substantial evidence that men and women differ from one another on several aspects of sexuality, irrespective of their sexual orientations (Peplau *et al.*, 1998). As I tell my students, if you want to understand the sexuality of gay men, think of them as men; if you want to understand the sexuality of lesbians, think of them as women. But most of these differences have to do with the primacy or intensity of erotic desire, the relative emphasis on the physical attributes of potential partners, and the willingness to engage in impersonal sex without romantic involvement. Such differences are not pertinent to EBE theory's account of how erotic orientations develop.

There is, however, one sex difference that *is* pertinent to EBE theory: Women's sexual orientations are more fluid than men's. Many studies, including a national random survey of Americans (Laumann *et al.*, 1994), have found that women are more likely to be bisexual than exclusively homosexual, whereas the reverse is true for men. Nonheterosexual women are also more likely to see their sexual orientations as flexible, even "chosen," whereas men are more likely to view their sexual orientations in essentialist terms, as inborn and unchangeable (Whisman, 1996). For example, men who come out as gay after leaving heterosexual marriages or relationships often describe themselves as having "finally realized" their "true" sexual orientation. Lesbians in similar situation, however, are more likely to reject the implication that their previous heterosexual relationships were inauthentic or at odds with who they really were: "That's who I was then, and this is who I am now."

The greater fluidity of women's sexual orientations is consistent with EBE theory. As noted earlier, Fig. 1 describes the path to sexual orientation *in a gender-polarizing culture*. But in our society, women grow up in a (phenomenologically) less gender-polarized culture than do men. Compared with boys, girls are punished less for being gender nonconforming, and, as the data in Table I reveal, they are more likely than boys to engage in both sex-typical and sex-atypical activities and are more likely to have childhood friends of both sexes. This implies that girls are less likely than boys to feel *differentially* different from opposite-sex and same-sex peers and, hence, are less likely to develop exclusively heteroerotic or homoerotic orientations.

It is even possible that some of today's nonheterosexual women may be giving a preview of what sexual orientations would look like in a less gender-polarized future. It is possible that we might even begin to see more men and women who, instead of using gender as the overriding criterion for selecting a partner, might base their erotic and romantic choices on a more diverse and idiosyncratic variety of attributes. As I remarked in my original article, "Gentlemen might still prefer blonds, but some of those gentlemen (and some ladies) might prefer blonds of any sex" (Bem, 1996, p. 332).

EBE THEORY VERSUS WHAT?

Many of my biologically oriented friends and colleagues tell me that they think EBE theory is very clever—and very wrong. They may be right. The existing data are far from decisive, and I am genuinely open to the possibility that biological factors influence sexual orientation more directly than EBE theory would have it.

But as much as I prefer being right to being wrong, I will be content if EBE theory does no more than provoke some affirmative competition. To my knowledge, there is no competing theory for a more direct or alternative path between the genotype and sexual orientation. It is not that such a theory has been advanced, tested, and found wanting, but that it has not yet been made.

In their public statements and published articles, my biologically oriented colleagues dutifully point out that correlation is not cause. But, as I have commented elsewhere (Bem, 1996), the reductive temptation of biological causation is so seductive that the caveat cannot possibly compete with the excitement of discovering yet another link between the anatomy of our brains and the anatomy of our lovers' genitalia. Unfortunately, the caveat vanishes completely as word of the latest discovery moves from *Science* to *Newsweek*. Surely the public can be forgiven for believing that we are but one NIH grant away from pinpointing the penis preference gene.

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