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Gender Differences in Sexuality: A Meta-Analysis

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This meta-analysis surveyed 177 usable sources that reported data on gender differences on 21 different measures of sexual attitudes and behaviors. The largest gender difference was in incidence of masturbation: Men had the greater incidence (d = .96). There was also a large gender difference in attitudes toward casual sex: Males had considerably more permissive attitudes (d = .81). There were no gender differences in attitudes toward homosexuality or in sexual satisfaction. Most other gender differences were in the small-to-moderate range. Gender differences narrowed from the 1960s to the 1980s for many variables. Chodorow's neoanalytic theory, sociobiology, social learning theory, social role theory, and script theory are discussed in relation to these findings.

It is a widespread belief in American culture that there are gender differences in sexuality, that is, in sexual behaviors and attitudes. For example, in a classic study of gender role stereotypes, one of the male-valued stereotypic traits that emerged was "talks freely about sex with men," reflecting the stereotype that being open and active about sexuality is part of the male role (Rosenkrantz, Vogel, Bee, Broverman, & Broverman, 1968). Reports of empirical findings of gender differences in sexual behaviors have also surfaced periodically and have then been widely cited. For example, Kinsey found a large gender difference in the lifetime incidence of masturbation: 92% for males compared with 58% for females (Kinsey, Pomeroy, Martin, & Gebhard, 1953). Kinsey also found that about half of the men in his sample reported having been aroused at some time by erotic stories; almost all of the women in the sample had heard such stories, but only 14% had been aroused by them (Kinsey et al., 1953).

Meta-analysis is a technique designed to permit the researcher to systematically evaluate the empirical evidence on a particular question by statistically cumulating the data from numerous studies. Recent meta-analyses have challenged many prevailing assumptions about gender differences. For example, although psychologists have believed for decades that the existence of gender differences in verbal ability and in mathematical ability are "well established" (Maccoby & Jacklin, 1974, p. 351), recent meta-analyses indicate that these differences are small or nonexistent (Hyde, Fennema, & Lamon, 1990; Hyde & Linn, 1988). The purpose of the present study was to evaluate the extensive research literature on gender and sexuality to determine the direction and magnitude of gender differences in eight aspects of attitudes about sexuality (attitudes toward premarital intercourse, attitudes about homosexuality, attitudes about extramarital sex, sexual permissiveness, anxiety about sex, sexual satisfaction, double-standard attitudes, attitudes about masturbation) and nine aspects of sexual behavior (incidence of kissing, incidence of petting, incidence of heterosexual intercourse, age of first intercourse, number of sexual partners, frequency of intercourse, incidence of masturbation, incidence of homosexual behavior, and incidence of oral–genital sexual behavior).

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Theoretical Perspectives on Gender Differences in Sexuality

A number of theories in psychology either address themselves directly to the issue of gender differences in sexuality or postulate a set of processes that readily lend themselves to predictions of the areas in which gender differences should and should not appear. Here we review the perspectives of the neoanalytic theorists Chodorow and Gilligan, sociobiology, social learning theory, social role theory, and script theory.

Neoanalytic Theories

The neoanalytic theorist Chodorow (1978) understood the causes of psychological gender differences as being rooted in the early family experiences of boys and girls.

Chodorow's (1978) theory begins with the observation that the major responsibility for child care is taken by mothers rather than fathers in virtually all families and all cultures. Therefore, both male infants and female infants form their earliest, most intense emotional attachment to a woman, their mother. The girl's sense of self is profoundly determined by this early relationship, which is never entirely broken. Girls never completely separate themselves from their mother and therefore define themselves throughout life in relational terms. Boys, on the other hand, begin with the same intense attachment but must smash it to form a distinct, masculine identity. Masculinity, according to Chodorow, involves denying feminine maternal attachment. Men's identity, then, is defined not in relational terms, but rather in terms of individuation and

independence. It is also defined by rejection and devaluation of the feminine.

Gilligan's (1982) theorizing on moral development derives from Chodorow's thinking. The care perspective in moral reasoning, which is taken more often by women according to the theory, emphasizes relatedness among people. The justice perspective, taken more often by men, views people as differentiated and emphasizes the rights of the individual.

What do these neoanalytic theories predict about gender differences in sexuality? A superficial consideration of the theories might lead one to say that they predict a stereotyped outcome: Women would be far more oriented to the quality of the relationship and emotional intimacy, whereas men would be more oriented toward body-centered sexuality (Reiss, 1960) that denies attachment and intimacy. However, a careful reading suggests more complex predictions from these theories. As Chodorow commented,

> the nature of the heterosexual relationship differs for boys and girls. Most women emerge from their oedipus complex oriented to their father and men as primary *erotic* objects, but it is clear that men tend to remain *emotionally* secondary, or at most emotionally equal, compared to the primacy and exclusivity of an oedipal boy's emotional ties to his mother and women. . . . Men defend themselves against the threat posed by love, but needs for love do not disappear through repression. Their training for masculinity and repression of affective relational needs, and their primarily nonemotional and impersonal relationships in the public world make deep primary relationships with other men hard to come by. Given this, it is not surprising that men tend to find themselves in heterosexual relationships. (Chodorow, 1978, pp. 192, 196)

Chodorow's theory focused not only on the consequences of the child's early attachment to the mother but also on male dominance in society. Noting social psychologists' research showing that men fall in love romantically, women sensibly and rationally, she concluded that this was a result of women's economic dependence on men. Women's displays of romanticism, then, may simply be a way of making sure that they and their future children are provided for.

What does Chodorow's theory predict about outcomes of empirical measures of sexual attitudes and behaviors? Two parts of the theory lead to an apparent contradiction that needs to be reconciled. The analytic portion of the theory led Chodorow to conclude that women were oriented toward men as erotic objects but that women could not find sufficient emotional satisfaction from men. This would lead to the prediction that women would not require emotional commitment to legitimize heterosexual sexual relationships, that is, that they would approve of casual premarital sex. However, the feminist part of the theory, which stresses male dominance and women's economic dependence, predicts that women will approve of sex only in committed relationships such as marriage, hoping to maximize economic security. On balance, the latter part of the theory must take precedence when making predictions. Therefore, the theory seems to predict that women will be more approving of, and likely to engage in, sex in the context of emotionally committed relationships and relatively disapproving of, and less likely to engage in, sex in casual relationships.

Sociobiology

Sociobiologists attempt to apply evolutionary biology in understanding the distal causes of human social behaviors. The sociobiological approach to human sexuality has been articulated particularly by Donald Symons (1979, 1987; see also Barash, 1977; for a critique, see Travis & Yeager, 1991). The bottom line, according to sociobiologists, is reproductive success, that is, maximizing the number of genes one passes on to the next generations. Therefore, patterns of human sexual behavior should be powerfully shaped by considerations of reproductive success.

Sociobiologists have addressed the existence of the double standard—society's permissive attitudes toward male promiscuity and intolerance for female promiscuity—in two ways. First, they point out that sperm are plentiful (the male body manufactures millions per day) whereas the egg is comparatively rare (only one is produced per month) and therefore precious. Thus, it makes evolutionary sense for the male to inseminate many females but for the female to be careful about which genes are paired with hers in the rare egg. Second, they point out that the woman commits 9 months of her body's energy to gestation. Already then, at birth, her parental investment exceeds the man's considerably (Trivers, 1972), leading her to want to continue to ensure the viability of the offspring by caring for them but also leading her to be highly selective in her choice of a mate. She may be particularly likely to prefer a mate who is willing and able to provide resources (Buss, 1989).

The predictions from sociobiology regarding gender differences in behavior, then, are clear: Men should be more approving of casual sex and should have a larger number of different sexual partners, whereas women should be less approving of casual sex and should have a smaller number of different partners.

When the relationship is a long-term, committed one such as marriage, male and female attitudes should be more similar and more approving. In a species that may well require two parents to successfully rear offspring, both men and women maximize their reproductive success by maintaining the relationship. Sociobiologists argue that although men may be somewhat more permissive than women on the issue of extramarital sex, men are especially disapproving of women engaging in extramarital sex. Because paternity certainty is less than 100%, a pregnancy from a woman's extramarital relationship may mean that her husband is spending his resources rearing another man's child and not effectively passing on his own genes to the next generation. These are origins, then, of male sexual jealousy and men's efforts to control the sexuality of women (e.g., Buss, Larsen, Westen, & Semmelroth, in press; Smuts, 1992).

In fairness to sociobiology, natural selection for patterns of sexual behavior occurred in societies much different from U.S. society today. It may be that the predictions of sociobiology cannot be fairly tested in our present society—which is so different from those traditional, ancestral ones in which natural selection presumably occurred.

Buss and Schmitt (1993) articulated a more nuanced theory of the evolution of human mating patterns in their sexual strate-

gies theory. Theirs is an evolutionary psychology theory, which takes patterns established both by evolution and by current cultural context into account. They argued that men and women have different sexual strategies and, moreover, that the strategies differ for each, depending on whether the context is short-term mating (e.g., casual sex) or long-term mating (e.g., marriage). Buss and Schmitt went on to reach predictions that were similar to sociobiologists (although Buss and Schmitt arrived there by a more complex route): Short-term mating will constitute a larger component of men's sexual strategy than of women's (i.e., men are more interested in and approving of casual sex than women are), and women generally will require reliable signs that a man is committed to them for the long term as a prerequisite for sexual intercourse (i.e., in general women are not terribly interested in casual sex because in that context they cannot be certain of the man's resources or of his commitment of those resources to them).

According to many accounts, sociobiology, by arguing that gender differences are controlled by genetic endowment resulting from generations of natural selection, cannot deal well with developmental change over the life span. However, some more recent attempts to apply evolutionary principles argued that natural selection for successful reproductive strategies might have different effects at different stages of development and in different social contexts (e.g., Belsky, Steinberg, & Draper, 1991). Therefore, although sociobiology presently is limited in its ability to deal with developmental change, future theorizing may be able to address these issues.

Social Learning Theory

Although Bandura's original writings on social learning theory did not address the issue of sexuality (e.g., Bandura, 1977; Bandura & Walters, 1963), Mischel (1966) applied principles of social learning theory to understanding gender roles and gender differences in behavior.

According to Mischel's articulation, gender differences are shaped by positive reinforcements for gender-role-consistent behavior, whereas role-inconsistent behavior is ignored or perhaps even punished, thereby becoming less frequent. At the same time, according to the theory, children differentially imitate same-gender adults, so that the gender role behavior of the previous generation perpetuates itself in the next generation.

On the other hand, parents are not the only adults to whom developing children are exposed. The media and other sources present many other models for imitation and observational learning. Thus, social learning theory can readily account for change over time in patterns of gender differences in sexuality. A generation or two ago, young women had chaste Doris Day as their model; today, they have openly sexual Madonna.

Therefore, social learning theory makes two predictions regarding patterns of gender differences in sexual behavior. First, it argues that there can be change over time in gender differences as a function of changing norms for sexual behavior and of changing images in the media, which provide models for imitation. Second, to the extent that the double standard is in force (Sprecher, McKinney, & Orbuch, 1987), substantial gender differences in attitudes and behaviors can be expected. In social learning terms, the *double standard* means that women are punished for sexual activities such as having numerous partners or engaging in causal sex, whereas men are not likely to be punished, or perhaps are even rewarded (through admiration or increased social status), for such behaviors. Therefore, social learning theory predicts a lower average number of sexual partners for women than for men. It also predicts that women will hold more negative attitudes about casual sex than men will. Finally, there will be a gender difference in sexual permissiveness: Women will be less permissive than will men.

Social Role Theory and Script Theory

Eagly has articulated social role theory and its application to gender roles and gender differences (e.g., Eagly, 1987; Eagly & Crowley, 1986).

There is no doubt that sexual behaviors are governed by roles and scripts. Sexual behaviors have been described as being scripted (Gagnon & Simon, 1973) or as involving sexual scenarios (DeLamater, 1987). At the same time, sexuality is an important component of gender roles. Heterosexuality is assumed to be part of both the male role and the female role (Bem, 1981), and persons who are described as male but having feminine qualities are assessed as having a higher probability of being gay (.40) than are men described as having masculine qualities (.20; Deaux & Lewis, 1984). However, a person described as female but having masculine qualities is given a lower probability (.27) of being a lesbian than is a man with nonstereotyped qualities. This suggests that role violations, including homosexuality, are more serious for the male role than for the female role. Social role theory, then, predicts that homosexuality will be viewed as a more serious violation of roles by males than by females, resulting in gender differences in attitudes toward homosexuality, with males holding the more negative attitudes.

The sexual double standard, discussed earlier (e.g., Sprecher et al., 1987), is critical in defining male and female roles in the realm of sexuality. Evidence indicates that the old double standard of several decades ago, in which sexual intercourse outside marriage was acceptable for men but not for women (Reiss, 1960), has largely been replaced by a new, conditional double standard, in which sex outside of marriage is tolerated for both men and women, but under more restrictive circumstances—such as love or engagement—for women (Sprecher et al., 1987).

How far-reaching is the impact of the double standard on role behaviors and attitudes? Certainly, social role theory should predict that women should have fewer premarital sexual partners than men and that women should hold more negative attitudes about casual premarital sex. The theory should predict that currently there should be no gender differences in attitudes about premarital sex in the context of a relationship such as engagement, although there may have been gender differences several decades ago, when a different version of the double standard was in force. Therefore, social role theory, like social learning theory, can account for and predict change over time in patterns of gender differences as gender roles change.

Content analyses of marriage and sex manuals give some indications of the content of gender roles in marital sexuality

(e.g., Gordon & Shankweiler, 1971; Weinberg, Swensson, & Hammersmith, 1983). These manuals in the 1950s and 1960s espoused a different-equals-less view of the female role in marital sexuality. The man was expected to be experienced and skillful, so that he could awaken the Sleeping Beauty sexuality of his wife. By the 1970s, this model was replaced by a humanistic sexuality model, in which women were viewed as equal partners in the sexual interaction. These widely read manuals doubtlessly had an impact on gender roles in marital sexuality. They led to a prediction of gender differences in sexual satisfaction before approximately 1970 but then no differences or a decline in gender differences in sexual satisfaction in the last 2 decades.

The classic articulation of script theory applied to sexuality is found in Gagnon and Simon's (1973) *Sexual Conduct*. Gagnon and Simon used the term *script* in two ways. One dealt with the interpersonal, in which the script organized the mutually shared conventions that allowed two people to participate in a complex sexual act involving mutual interaction. The other dealt with internal states and motivations in which the individual had certain scripts that produced arousal and predisposed to sexual activity. Gagnon and Simon directly addressed the issue of gender differences in sexuality. They traced much of the origin of these differences to the period of early adolescence, just after puberty. During this period, they argued, the boy's sexuality is focused on masturbation. He is likely to have a great deal of sexual activity during this period, but because it is masturbation centered, it is typically done alone and secretly. Girls, in contrast, are far less likely to engage in masturbation during this period, which is relatively asexual for them. Instead, they spend the period focusing, traditionally, on beginning preparations for the adult female role, or at least on attracting male interest. The girl's earliest experiences with sexuality occur somewhat later than the boy's and are typically heterosexual, that is, in a relational context. Indeed, many females see the existence of a committed relationship as the prerequisite for sexual expression.

Script theory emphasizes the symbolic meaning of behaviors. Gagnon and Simon concluded, following the arguments above, that the meaning of sexuality was tied far more to individual pleasure for males and to the quality of relationship for females.

Mosher and Tomkins (1988) have extended script theory in their writing about the Macho Man and the macho personality constellation in men—which consists of callous sexual attitudes, a belief that violence is manly, and a belief that danger is exciting. Not all men, of course, become macho men, but the existence of the script in the culture means that it influences all men, some to a lesser extent and some to a greater extent. The Macho Man's sense of entitlement to callous sex means that he will have a large number of different sexual partners and that he will hold approving attitudes toward casual sex.

Summary

The five theories reviewed—neoanalytic theories, sociobiology, social learning theory, social role theory, and script theory—are all in agreement in predicting that females will have a smaller number of sexual partners than will males and that females will have more negative attitudes toward casual, premarital sex. Each theory also addresses somewhat different issues in regard to gender and sexuality. The present study was not designed as a critical test of the theories; rather, the theories help illuminate the mechanisms that may be behind the observable differences assessed in this meta-analysis.

The Present Study

The present study used the technique of meta-analysis to synthesize research presenting data on gender differences in sexual attitudes and sexual behaviors. Two variables that might moderate the gender differences in sexuality were also examined: subjects' age and date of data collection (to examine change over time).

Method

Sample of studies. Two primary sources were used to generate the sample of studies: (a) a computerized database search of PsycLIT for the years 1974 (the earliest year available on this database) through 1990, using the key terms *sexual attitudes* and *psychosexual behavior*, and (b) a computerized database search of the Educational Resources Information Center (ERIC) for the years 1966 (the earliest year available on this database) through 1990, using the key term *sexuality*. In addition, data from several well-known and large-scale surveys were included: those of (a) Blumstein and Schwartz (1983), (b) DeLamater and MacCorquodale (1979), (c) Klassen, Williams, and Levitt (1989), and (d) Sorensen (1972) and (e) data from surveys conducted by the National Opinion Research Center (Wood, 1990).[1]

In the case of computerized searches, abstracts were printed for each citation and were examined for relevancy to the topic of study. Studies that had any of the following characteristics were excluded from the sample: (a) a sample of respondents who were not from the United States or Canada, (b) data that were not original, (c) a sample of respondents who were clinical (e.g., seeking help for marital or sexual dysfunctions), or (d) a sample of respondents who were being treated for a medical illness (e.g., burn victims or cancer patients). Subsequently, all remaining articles were photocopied from journals or from microfiche (in the case of ERIC documents) for complete inspection.

It is possible for a single article to report data for several samples such as different age groups or ethnic groups. These groups can be regarded as separate samples (Hedges, 1987, personal communication). Furthermore, it is possible for an article to report data on several variables of interest (e.g., attitudes toward premarital intercourse and attitudes toward homosexuality). Therefore, several effect sizes can be computed for a single sample. In this study, all effect sizes were computed for each sample and were analyzed separately.

The result was 177 usable sources yielding 239 independent samples and 490 effect sizes. This represented the testing of 128,363 respondents (58,553 males and 69,810 females).

Coding the studies. For each study, the following information was recorded: (a) all statistics on gender differences in the sexual attitude or behavior measure(s), including means, standard deviations, t tests, F ratios, and degrees of freedom; (b) the number of male and female respondents; (c) the mean age of the respondents (if the article reported no ages but reported "high school students," the age was set to 16; if the article reported "undergraduates," the age was set equal to 20; if the article reported "college seniors" or "undergraduate and graduate stu-

[1] The survey conducted by Hunt (1974) was not included in this study because of insufficient information to compute effect sizes.

dents," the age was set to 22; if the article reported grade level, 5 years were added to compute age, e.g., ninth graders were recorded as age 14); (d) the year the data were collected (if the year was not reported, the data year was computed by subtracting 2 from the year of publication, e.g., an article published in 1978 with no data year reported was recorded as having collected data in 1976).[2] The type of sexual attitude or behavior measure(s) used in a given study was also coded, as explained below.

Sexual attitude and behavior measures. Twenty-one sexual attitude and behavior measures were included in the analyses. The measures were labeled and defined as follows:

1. *Premarital attitudes.* Attitudes concerning the acceptability of premarital intercourse. If the question was worded so that respondents were asked to indicate the circumstances under which premarital intercourse was acceptable, abstinence was coded as nonacceptance of premarital intercourse, and all other categories were coded as acceptance of premarital intercourse.

2. *Intercourse—casual.* Attitudes concerning the acceptability of premarital intercourse in a casual dating relationship or without emotional commitment.

3. *Intercourse—committed.* Attitudes concerning the acceptability of premarital intercourse given love or emotional commitment.

4. *Intercourse—engaged.* Attitudes concerning the acceptability of premarital intercourse given that the couple is engaged.

5. *Homosexuality attitudes.* Attitudes toward homosexuality.

6. *Homosexual civil liberties.* Attitudes toward homosexuals' civil liberties, for example, career opportunities and free speech.

7. *Extramarital attitudes.* Attitudes concerning the acceptability of extramarital intercourse.

8. *Sexual permissiveness.* Attitudes about sexuality per se, such as acceptance of many sexual partners, beliefs that extensive sexual experience is acceptable, for example, Hendrick and Hendrick's (1987) Sexual Permissiveness Scale.

9. *Anxiety/fear/guilt.* Expressed anxiety, shame, disgust, fear, or guilt about sexuality, for example, Mosher's Sex Guilt Inventory (Mosher, 1979). Measures of anxiety, fear, or guilt were excluded if different scales were used for males and females.

10. *Sexual satisfaction.* Satisfaction or contentment with one's sexual activity, either within the current relationship or in general.

11. *Double standard.* Beliefs that female premarital sexual activity is less acceptable than male sexual activity. Because of the calculations involved in the computations of the statistics used in this study, it was not possible to include measures of the double standard that were obtained by asking respondents to indicate separately the acceptability of male premarital intercourse and female premarital intercourse.

12. *Masturbation attitudes.* Attitudes toward masturbation.

13. *Kissing incidence.* Any experience with romantic kissing at any level of sexual intimacy, for example, French or passionate.

14. *Petting incidence.* Any experience with petting at any level of sexual intimacy, for example, clothed, partially clothed, or lying down. This measure was excluded if respondents were asked only to indicate if they had experienced petting to orgasm.

15. *Intercourse incidence.* Any experience with heterosexual, vaginal intercourse.

16. *Age at first intercourse.* The age at which the respondent first experienced sexual intercourse. This measure was excluded unless all of the respondents in the sample had experienced intercourse.

17. *Number of sexual partners.* The number of partners with whom the respondent had experienced sexual intercourse. This measure was excluded unless (a) all of the respondents in the sample had experienced intercourse or (b) nonvirgins were included as having zero partners.

18. *Frequency of intercourse.* The frequency with which the respondent engaged in sexual intercourse. This measure was excluded unless all of the respondents in the sample had experienced intercourse or unless nonvirgins were included as having zero frequency.

19. *Masturbation incidence.* Any experience with masturbation.

20. *Homosexual incidence.* Any sexual experience with a same-sex partner, for example, intercourse or oral sex.

21. *Oral sex incidence.* Any experience with giving or receiving heterosexual oral sex. Because many studies did not differentiate between giving and receiving oral sex in the questions posed to respondents, a distinction between the two could not be made in the present study.

Statistical analysis. The effect size computed for each of the sexual attitude and behavior measures was *d*. This measure is defined as the mean score for males minus the mean score for females, divided by the pooled within-sex standard deviation. In this analysis, positive values of *d* reflected male respondents having more permissive or positive attitudes toward premarital intercourse, homosexuality, extramarital intercourse, and masturbation; greater endorsement of the double standard; higher levels of anxiety, fear, or guilt; higher levels of sexual satisfaction; younger age at first intercourse; greater number of sexual partners; and higher incidence of sexual experiences (kissing, petting, intercourse, frequency of intercourse, masturbation, oral sex, and homosexual experience). Negative values of *d* reflected female respondents having more permissive or positive attitudes toward premarital intercourse, homosexuality, extramarital intercourse, and masturbation; greater endorsement of the double standard; higher levels of anxiety, fear, or guilt; higher levels of sexual satisfaction; younger age at first intercourse; greater number of sexual partners; and higher incidence of sexual experiences (kissing, petting, intercourse, frequency of intercourse, masturbation, oral sex, and homosexual experience).

Formulas provided by Hedges and Becker (1986) were used for the computations of *d*, depending on the statistics reported in a given study. In addition, *d* values were first corrected for bias in estimation of the population effect size, using the formula provided by Hedges (1981). Table 1 contains the complete listing of studies and effect sizes.

To establish interrater reliability for coding the 21 categories of sexual attitude and behavior measures, we each independently rated 20 articles. Thirty-seven measures were coded for the type of sexual attitude or behavior, and effect sizes were computed. Interrater reliability was 95%.

Results

Magnitude of gender differences in sexual attitudes and sexual behaviors. Table 2 contains the mean effect sizes averaged over the independent samples. This table shows that males reported more permissive attitudes and greater incidence of behaviors on most measures. In terms of attitudes, males reported greater acceptance of premarital intercourse than did females, with a particularly large gender difference revealed for attitudes toward premarital intercourse under casual circumstances. A large gender difference was also revealed for measures of sexual permissiveness: Males reported more permissive attitudes than did females. Moderately large *d* values were obtained for extra-

(text continues on page 42)

[2] Note that the estimates of the year of data collection that were used when such information was not provided are not exact. In some instances, the estimation procedure of subtracting 2 years from the year of publication would have overestimated the recency of data collection (e.g., two cases in which year of data collection was know, Hendrick & Hendrick, 1987; Miller & Simon, 1974). In other instances, however, this procedure would have underestimated the recency of data collection (e.g., Frevert et al., 1981; Zuckerman, 1973).

Table 1
Studies of Gender Differences in Sexual Attitudes and Behaviors (in Alphabetical Order)

Study	Data year[a]	Mean age	*n*		*d*[b]	Measure
			Males	Females		
Abernathy et al., 1979	1977	20	134	158	0.27	Intercourse—committed
					0.21	Petting incidence
					−0.48	Double standard
					0.71	Intercourse incidence
					0.56	Premarital attitudes
Abler & Sedlacek, 1989	1987	19	143	142	0.68	Intercourse incidence
					0.56	Premarital attitudes
					0.14	Premarital attitudes
Abramson, 1973	1971	19	75	84	1.24	Masturbation incidence
					−0.22	Frequency of intercourse
					0.21	Intercourse incidence
Abramson & Imai-Marquez, 1982	1980	43	73	71	−0.43	Anxiety/fear/guilt
Abramson & Mosher, 1975	1973	20	96	102	−0.02	Masturbation attitudes
					0.20	Intercourse incidence
					0.83	Masturbation incidence
Abramson et al., 1981	1979	28	37	32	0.02	Masturbation attitudes
Aguero et al., 1984	1982	19	221	255	0.85	Sexual permissiveness
					−0.07	Frequency of intercourse
Arafat & Cotton, 1974	1973	21	230	205	0.95	Masturbation incidence
Baker et al., 1988	1979	16	162	164	0.08	Intercourse incidence
Bauman & Udry, 1981	1978	13	103	113	−0.70	Anxiety/fear/guilt
					1.14	Intercourse incidence
Bauman & Udry, 1981	1978	13	40	51	0.79	Intercourse incidence
					−1.00	Anxiety/fear/guilt
Bauman & Wilson, 1974	1968	20	98	88	0.25	Intercourse incidence
	1972	20	107	68	0.00	Intercourse incidence
Belcastro, 1985	1983	20	209	258	0.71	Homosexual incidence
					−0.30	Oral sex incidence
					0.00	Intercourse incidence
Belcastro, 1985	1983	20	38	60	0.08	Oral sex incidence
					0.41	Homosexual incidence
					0.37	Intercourse incidence
Bettor, 1989	1987	20	85	81	0.52	Intercourse incidence
					0.79	Sexual permissiveness
					0.37	Anxiety/fear/guilt
Billingham et al., 1989	1987	22	221	220	0.30	Sexual permissiveness
Billy, Landale, et al., 1988	1980	14	390	413	0.67	Intercourse incidence
Billy, Landale, et al., 1988	1980	14	163	154	1.15	Intercourse incidence
Billy, Rodgers, & Udry, 1984	1979	14	110	128	0.74	Intercourse incidence
Billy, Rodgers, & Udry, 1984	1979	14	90	80	1.18	Intercourse incidence
Blumstein & Schwartz, 1983	1975	39	3,656	3,656	−0.05	Sexual satisfaction
					0.38	Sexual permissiveness
Blumstein & Schwartz, 1983	1975	31	653	653	0.14	Sexual permissiveness
					0.00	Sexual satisfaction
Blumstein & Schwartz, 1983	1975	34	1,938	1,576	0.63	Sexual permissiveness
					−0.11	Sexual satisfaction
					0.50	Frequency of intercourse
Bretschneider & McCoy, 1988	1986	86	100	102	0.67	Frequency of intercourse
					0.84	Sexual satisfaction
Brown & Pollack, 1982	1980	20	81	61	1.13	Intercourse incidence
Burger & Inderbitzen, 1985	1983	20	52	71	0.24	Intercourse incidence
Carroll et al., 1985	1982	20	130	119	0.72	Intercourse incidence
					1.34	Sexual permissiveness

Table 1 (*continued*)

Study	Data year[a]	Mean age	*n* Males	*n* Females	*d*[b]	Measure
Catlin et al., 1976	1974	20	89	89	0.37	Number of sexual partners
					0.60	Age at first intercourse
					0.74	Homosexual incidence
					−0.24	Sexual satisfaction
					0.64	Masturbation incidence
Conley & O'Rourke, 1973	1971	21	124	95	0.16	Sexual permissiveness
					−0.16	Homosexuality attitudes
Cullari & Mikus, 1990	1988	16	51	65	0.23	Intercourse incidence
Cullari & Mikus, 1990	1988	15	47	45	0.17	Intercourse incidence
Curran, 1975	1973	20	88	76	0.40	Petting incidence
					0.29	Intercourse incidence
					−0.15	Kissing incidence
					−0.27	Oral sex incidence
Darling & Davidson, 1986	1984	20	96	116	−0.20	Frequency of intercourse
					0.53	Petting incidence
					0.00	Kissing incidence
					0.20	Number of sexual partners
					0.64	Masturbation incidence
Daugherty & Burger, 1984	1982	20	54	73	0.86	Sexual permissiveness
					−0.52	Anxiety/fear/guilt
Davids, 1982	1979	20	139	69	0.58	Sexual permissiveness
Davidson, 1985	1983	21	144	166	0.82	Masturbation incidence
					−0.24	Sexual satisfaction
Davidson & Darling, 1986	1984	20	54	119	0.98	Masturbation incidence
					0.41	Intercourse incidence
					0.36	Oral sex incidence
Dearth & Cassell, 1976	1974	20	121	176	−0.42	Attitudes toward homosexuality
DeLamater & MacCorquodale, 1979	1973	20	432	431	0.47	Premarital attitudes
					−0.08	Petting incidence
					−0.17	Kissing incidence
					0.42	Intercourse incidence
					0.24	Number of sexual partners
					0.05	Oral sex incidence
					0.23	Intercourse incidence
					0.00	Kissing incidence
					−0.08	Petting incidence
					0.38	Number of sexual partners
					0.08	Oral sex incidence
					0.57	Premarital attitudes
DelCampo et al., 1976	1973	20	170	222	0.72	Premarital attitudes
Denney et al., 1984	1982	22	39	49	−0.08	Number of sexual partners
					−0.40	Frequency of intercourse
Derogatis et al., 1976	1974	22	70	76	−0.53	Kissing incidence
					−0.85	Petting incidence
					0.09	Intercourse incidence
					0.50	Masturbation incidence
Diamant, 1969	1969	22	54	62	0.31	Intercourse incidence
DiBlasio & Branda, 1990	1988	16	419	1,191	0.43	Intercourse incidence
Earle & Perricone, 1986	1970	20	153	90	0.13	Intercourse incidence
	1975	20	102	80	0.44	Intercourse incidence
					0.95	Intercourse—casual
					0.25	Intercourse—engaged
	1981	20	216	152	0.23	Intercourse incidence
					0.36	Intercourse—engaged
					0.44	Intercourse—committed
					1.44	Intercourse—casual
Eisen & Zellman, 1987	1984	16	77	126	0.22	Intercourse incidence
Elias & Elias, 1975	1969	16	67	96	0.17	Kissing incidence
					1.20	Masturbation incidence
					0.73	Intercourse incidence
					0.77	Petting incidence

(table continues)

Table 1 (*continued*)

Study	Data year[a]	Mean age	*n*		*d*[b]	Measure
			Males	Females		
Fabes & Strouse, 1987	1985	20	248	286	0.30	Intercourse incidence
Faulkenberry & Vincent, 1979	1977	20	198	252	0.45	Intercourse incidence
Faulkenberry et al., 1987	1985	21	178	218	0.41	Age at first intercourse
Fields, 1983	1981	47	145	145	−0.06	Sexual satisfaction
Fingerman, 1989	1987	16	47	44	0.26	Petting incidence
					0.28	Kissing incidence
					0.28	Intercourse incidence
Fisher & Hall, 1988	1986	13	20	15	0.76	Sexual permissiveness
		16	21	26	0.23	Sexual permissiveness
		19	17	42	0.11	Sexual permissiveness
		43	18	123	0.24	Sexual permissiveness
Frank et al., 1979	1977	36	80	80	0.29	Sexual satisfaction
Frevert et al., 1981	1980	20	78	64	0.03	Masturbation attitudes
					0.00	Homosexual incidence
					0.41	Intercourse: committed
					0.48	Kissing incidence
					0.69	Petting incidence
					0.84	Intercourse: casual
					0.52	Intercourse incidence
					0.46	Sexual permissiveness
					0.60	Oral sex incidence
Frevert et al., 1981	1980	19	76	132	0.43	Intercourse—committed
					0.38	Masturbation attitudes
					0.05	Petting incidence
					1.37	Intercourse—casual
					0.40	Kissing incidence
					0.33	Intercourse incidence
					0.10	Oral sex incidence
					0.25	Homosexual incidence
					0.69	Sexual permissiveness
Furstenberg et al., 1987	1981	16	177	175	0.33	Intercourse incidence
Furstenberg et al., 1987	1981	16	52	58	0.46	Intercourse incidence
Gagnon, 1985	1983	32	641	759	0.00	Masturbation attitudes
Geis & Gerrard, 1984	1982	19	341	302	0.28	Intercourse incidence
George & Weiler, 1981	1969	50	63	57	0.37	Frequency of intercourse
		60	74	36	0.26	Frequency of intercourse
		68	33	15	0.47	Frequency of intercourse
Getts, 1988	1986	14	27	33	0.16	Intercourse incidence
		16	24	37	−0.08	Intercourse incidence
		20	7	21	−0.77	Intercourse incidence
Gfellner, 1988	1986	20	71	128	0.73	Premarital attitudes
					1.05	Sexual permissiveness
Gilbert & Gamacke, 1984	1982	36	116	210	0.47	Sexual permissiveness
Glassner & Owen, 1976	1974	20	33	28	−0.10	Lesbian and gay male civil liberties
					−0.33	Homosexuality attitudes
Graverholz & Serpe, 1985	1982	21	83	99	0.14	Masturbation attitudes
					0.24	Intercourse incidence
Green, 1985	1983	19	510	704	0.45	Age at first intercourse
					0.54	Masturbation incidence
					0.14	Frequency of intercourse
Greenberg, 1972	1970	21	52	75	0.23	Intercourse incidence
					0.96	Masturbation incidence
Greenberg & Archambault, 1973	1971	30	21	33	0.19	Masturbation incidence
Griffitt, 1975	1973	20	30	30	0.25	Intercourse incidence
					0.76	Petting incidence
					1.97	Masturbation incidence
					0.58	Oral sex incidence
Hampe & Ruppel, 1974	1966	20	156	202	0.80	Intercourse—engaged
					1.53	Intercourse—casual
					0.91	Intercourse—committed
Harrison et al., 1969	1967	16	37	45	1.51	Sexual permissiveness

Table 1 (*continued*)

Study	Data year[a]	Mean age	*n* Males	*n* Females	*d*[b]	Measure
Harrison et al., 1969	1967	16	19	25	0.27	Sexual permissiveness
Hartnett & Zettle, 1980	1978	27	70	135	0.21	Homosexual incidence
					0.63	Masturbation incidence
					−0.35	Intercourse incidence
					−0.25	Oral sex incidence
Hatfield et al., 1982	1976	26	53	53	0.08	Sexual satisfaction
Haynes & Oziel, 1976	1974	20	2,246	2,005	0.28	Homosexual incidence
Heit & Adesso, 1978	1975	20	17	57	1.05	Masturbation incidence
					−0.44	Intercourse incidence
Hendrick & Hendrick, 1987	1984	19	466	341	1.37	Sexual permissiveness
Hendrick & Hendrick, 1987	1984	19	199	368	1.32	Sexual permissiveness
Henley & Pincus, 1978	1976	19	119	92	0.00	Attitudes toward homosexuality
Hicks & Darling, 1982	1980	20	363	333	0.18	Intercourse incidence
					−0.30	Petting incidence
Hildebrand & Abramowitz, 1984	1969	20	564	1,046	0.38	Intercourse incidence
					1.06	Masturbation incidence
Hildebrand & Abramowitz, 1984	1981	20	318	476	0.24	Intercourse incidence
					0.70	Masturbation incidence
Hobart, 1974	1972	20	315	333	0.47	Premarital attitudes
					0.36	Intercourse incidence
Hobart, 1984	1977	20	188	160	0.09	Intercourse incidence
					0.35	Premarital attitudes
Hobart, 1984	1977	20	189	222	0.14	Premarital attitudes
Hornick, 1978	1976	17	87	67	−0.06	Intercourse incidence
		20	221	425	0.57	Intercourse incidence
Horton et al., 1976	1974	18	26	58	0.33	Premarital attitudes
Jacoby & Williams, 1985	1982	19	70	130	0.51	Intercourse incidence
Janda & O'Grady, 1980	1978	20	95	135	−0.70	Anxiety, fear, guilt
Jessor & Jessor, 1975	1972	15	75	96	−0.17	Intercourse incidence
		16	60	82	−0.33	Intercourse incidence
		17	51	64	−0.57	Intercourse incidence
		20	78	102	−0.12	Intercourse incidence
Joe et al., 1976	1974	20	64	50	0.28	Intercourse incidence
					−0.02	Oral sex incidence
					−0.10	Petting incidence
Johasz et al., 1986	1984	17	222	229	0.91	Sexual permissiveness
King et al., 1977	1965	20	129	115	0.95	Intercourse incidence
					0.78	Petting incidence
					0.97	Premarital attitudes
King et al., 1977	1970	20	137	158	0.71	Intercourse incidence
					−0.21	Petting incidence
					0.67	Premarital attitudes
King et al., 1977	1975	20	138	298	0.46	Intercourse incidence
					0.04	Premarital attitudes
					0.11	Petting incidence
King & Sobel, 1975	1972	21	297	371	0.37	Intercourse incidence
Kirschner & Sedlacek, 1983	1973	18	211	244	0.77	Sexual permissiveness
					0.25	Intercourse incidence
					−0.30	Masturbation attitudes
Kirschner & Sedlacek, 1983	1983	18	261	199	0.71	Sexual permissiveness
					−0.49	Homosexuality attitudes
Klassen et al., 1989	1970	43	1,465	1,553	0.23	Masturbation attitudes
					0.39	Homosexual incidence
					−0.03	Lesbian and gay male civil liberties
					1.41	Masturbation incidence
					0.46	Intercourse—committed
					0.21	Attitudes toward homosexuality
					0.59	Intercourse—casual
					0.34	Extramarital attitudes

(table continues)

Table 1 (*continued*)

Study	Data year[a]	Mean age	*n* Males	*n* Females	*d*[b]	Measure
Knoth et al., 1988	1986	16	100	98	−0.31	Intercourse incidence
					−0.31	Petting incidence
					0.44	Masturbation incidence
					1.17	Homosexual incidence
					−0.49	Kissing incidence
					−0.78	Oral sex incidence
Koch, 1988	1986	21	261	412	0.19	Age at first intercourse
Laner et al., 1978	1976	20	42	96	0.31	Intercourse—committed
Langston, 1973	1971	20	76	116	−0.93	Anxiety/fear/guilt
Larsen, Cate, & Reed, 1983	1980	20	135	179	0.25	Petting incidence
					0.21	Intercourse incidence
					0.20	Oral sex incidence
Larsen, Reed, & Hoffman, 1980	1978	21	38	32	−0.45	Attitudes toward homosexuality
		22	72	106	−0.49	Attitudes toward homosexuality
Leary & Dobbins, 1983	1981	19	90	170	0.36	Intercourse incidence
Leitenberg & Slavin, 1983	1981	19	106	212	−0.22	Lesbian and gay male civil liberties
					−0.02	Attitudes toward homosexuality
Lester & Leach, 1983	1980	20	101	107	−0.11	Intercourse incidence
Lewis & Burr, 1975	1968	20	856	1,597	0.48	Intercourse incidence
Luckey & Nass, 1972	1970	20	629	687	0.00	Kissing incidence
					0.38	Intercourse incidence
					−0.43	Double standard
					0.26	Petting incidence
					0.29	Premarital attitudes
Luckey & Nass, 1972	1970	20	84	86	0.75	Premarital attitudes
					0.61	Kissing incidence
					−0.37	Double standard
					0.52	Petting incidence
					0.55	Intercourse incidence
Malcolm & Shephard, 1978	1976	16	58	77	−1.27	Attitudes toward homosexuality
					0.40	Premarital attitudes
					0.26	Intercourse incidence
					0.45	Number of sexual partners
					0.77	Sexual permissiveness
Maranell et al., 1970	1968	20	171	266	0.99	Sexual permissiveness
Maret & Maret, 1982	1980	20	72	79	0.63	Premarital attitudes
					0.85	Extramarital attitudes
Markowski et al., 1978	1976	22	50	50	0.13	Sexual satisfaction
					0.22	Number of sexual partners
					0.84	Homosexual incidence
					0.22	Age at first intercourse
					0.75	Number of sexual partners
					0.29	Age at first intercourse
					1.12	Homosexual incidence
					−0.04	Sexual satisfaction
Maxwell et al., 1977	1975	21	138	182	0.20	Intercourse incidence
McBride & Ender, 1977	1975	20	71	167	0.66	Intercourse incidence
					0.76	Intercourse—engaged
					0.60	Petting incidence
					0.85	Intercourse—committed
					−0.44	Kissing incidence
					0.74	Oral sex incidence
					0.81	Intercourse—casual
McCann & Biaggio, 1989	1987	42	48	48	0.55	Sexual satisfaction
McCormick et al., 1985	1983	17	75	88	0.39	Intercourse incidence
Medora & Burton, 1981	1979	20	100	100	0.49	Extramarital attitudes
Medora & Woodward, 1982	1980	22	43	52	0.85	Sexual permissiveness
Mercer & Kohn, 1979	1977	20	134	90	0.38	Sexual permissiveness
					0.36	Intercourse incidence
B. C. Miller, McCoy, & Olson 1986	1983	16	204	421	0.03	Intercourse incidence
B. C. Miller, McCoy, et al., 1986	1984	16	506	866	0.20	Intercourse incidence
P. Y. Miller & Simon, 1974	1971	15	531	558	0.08	Petting incidence
					0.24	Intercourse incidence

Table 1 (*continued*)

Study	Data year[a]	Mean age	*n* Males	*n* Females	*d*[b]	Measure
P. Y. Miller & Simon, 1974	1971	17	481	494	−0.04	Intercourse incidence
					0.11	Petting incidence
W. R. Miller & Lief, 1976	1974	25	414	142	−0.20	Masturbation attitudes
					1.11	Masturbation incidence
Moore & Erickson, 1985	1983	19	265	329	−0.08	Intercourse incidence
Mosher, 1973	1971	19	194	183	0.44	Intercourse incidence
Mosher, 1979	1977	20	87	88	−0.45	Anxiety/fear/guilt
					0.39	Intercourse incidence
Murphy et al., 1981	1979	20	235	321	0.27	Intercourse incidence
Murstein, Chalpin, et al., 1989	1979	20	111	155	0.16	Intercourse incidence
					0.85	Premarital attitudes
Murstein, Chalpin, et al., 1989	1986	20	125	170	0.10	Intercourse incidence
					0.00	Premarital attitudes
Murstein & Holden, 1979	1977	20	184	163	0.28	Intercourse incidence
					0.09	Premarital attitudes
Nagy & Adcock, 1990	1987	15	1,975	1,828	0.67	Sexual permissiveness
					0.52	Intercourse—committed
					0.62	Intercourse incidence
Newcomb, 1985	1983	25	148	136	−0.23	Intercourse incidence
					0.00	Number of sexual partners
Newcomer & Udry, 1985	1982	16	256	289	0.33	Intercourse incidence
					0.29	Oral sex incidence
Newcomer et al., 1983	1980	14	502	527	0.68	Intercourse incidence
			187	189	0.99	Intercourse incidence
Nowinski et al., 1981	1979	35	99	99	−0.06	Sexual satisfaction
Nutt & Sedlacek, 1974	1972	18	399	353	−0.14	Masturbation attitudes
					0.74	Sexual permissiveness
					−0.16	Attitudes toward homosexuality
					0.15	Intercourse incidence
					0.14	Homosexual incidence
Nyberg & Alston, 1977	1975	18	301	218	−0.28	Attitudes toward homosexuality
O'Grady & Janda, 1979	1977	20	148	151	−0.35	Anxiety/fear/guilt
Ostrov et al., 1985	1983	16	202	255	0.43	Intercourse incidence
Philliber & Tatum, 1982	1980	16	143	125	0.26	Intercourse incidence
Phillis & Gromko, 1985	1983	20	117	327	0.40	Intercourse incidence
Rees & Zimmerman, 1974	1972	20	128	102	0.10	Oral sex incidence
					0.82	Masturbation attitudes
					0.53	Intercourse incidence
					2.20	Masturbation incidence
					0.19	Attitudes toward homosexuality
					0.61	Premarital attitudes
Rhyne, 1981	1977		743	1,216	−0.16	Sexual satisfaction
Robinson & Jedlicka, 1982	1980	20	168	230	0.28	Premarital attitudes
		20	168	230	−0.17	Petting incidence
		20	168	230	0.38	Intercourse incidence
Roche, 1986	1983	20	84	196	−0.12	Intercourse—engaged
					−0.05	Intercourse—committed
					−0.24	Intercourse incidence
					0.51	Oral sex incidence
					1.16	Intercourse—casual
					0.00	Petting incidence
Rosenzweig & Dailey, 1989	1986	40	148	151	−0.10	Sexual satisfaction
Sack et al., 1984	1979	20	234	232	−0.06	Intercourse incidence
Schalmo & Levin, 1974	1973	22	132	183	0.92	Intercourse incidence
Schulz et al., 1977	1968	22	912	991	0.12	Intercourse incidence
Shelley, 1981	1979	15	60	75	1.00	Sexual permissiveness
Sherwin & Corbett, 1985	1963	20	100	100	0.92	Intercourse incidence
	1971	20	378	615	0.48	Intercourse incidence
	1978	20	365	658	0.10	Intercourse incidence
Shively & DeCecco, 1978	1975	24	624	415	0.38	Homosexual incidence
Silverman, 1977	1970	20	208	280	0.96	Premarital attitudes
Silverman, 1977	1970	20	190	335	0.20	Premarital attitudes

(table continues)

Table 1 (*continued*)

Study	Data year[a]	Mean age	*n* Males	*n* Females	*d*[b]	Measure
Simon, 1989	1987	22	54	84	0.67	Homosexual incidence
					0.25	Intercourse incidence
Smith et al., 1980	1978	19	100	90	0.55	Intercourse incidence
Sorensen, 1972	1972	14	89	87	0.73	Intercourse—casual
					0.37	Intercourse incidence
					0.41	Extramarital attitudes
					−0.09	Homosexual incidence
					0.18	Masturbation incidence
					−0.20	Double standard
					−0.16	Sexual permissiveness
					−0.24	Attitudes toward homosexuality
					0.56	Anxiety/fear/guilt
					0.00	Premarital attitudes
Sorensen, 1972	1972	18	109	108	0.47	Extramarital attitudes
					0.43	Sexual permissiveness
					0.00	Anxiety/fear/guilt
					0.40	Intercourse incidence
					0.05	Double standard
					0.61	Homosexual incidence
					0.13	Attitudes toward homosexuality
					1.36	Intercourse—casual
					0.72	Masturbation incidence
					0.74	Premarital attitudes
Spanier & Cole, 1975	1967	20	336	568	0.48	Intercourse incidence
	1971	29	287	292	0.42	Extramarital attitudes
Spencer & Zeiss, 1987	1985	22	129	146	0.61	Masturbation incidence
Spreadbury, 1982	1980	20	38	129	0.27	Intercourse incidence
Sprecher, 1989	1987	20	32	54	0.70	Sexual permissiveness
Staples, 1978	1970	20	66	53	0.59	Premarital attitudes
			94	83	0.81	Premarital attitudes
Strassberg & Mahoney, 1988	1986	19	62	85	0.19	Age at first intercourse
Teevan, 1972	1967	20	498	521	0.61	Intercourse incidence
Thomas, 1973	1972	20	370	525	0.39	Intercourse incidence
Thornton, 1990	1980	18	461	421	0.59	Premarital attitudes
					0.24	Number of sexual partners
					0.24	Intercourse incidence
Townsend, 1987	1985	25	20	20	1.54	Age at first intercourse
					0.78	Number of sexual partners
Treboux & Busch-Rossnagel, 1990	1988	17	161	200	0.13	Intercourse incidence
Turnbull & Brown, 1977	1976	19	34	31	−0.62	Attitudes toward homosexuality
					0.00	Sexual permissiveness
Udry, 1988	1982	14	101	78	0.17	Masturbation incidence
					0.69	Intercourse incidence
Vincent & Barton, 1972	1971	20	97	170	0.56	Premarital attitudes
					0.45	Intercourse incidence
Wagner et al., 1973	1968	16	40	35	0.19	Intercourse incidence
					0.10	Petting incidence
					−0.11	Kissing incidence
Walfish & Myerson, 1980	1978	20	53	123	0.54	Sexual permissiveness
Walsh et al., 1976	1967	19	47	204	0.64	Intercourse incidence
					1.65	Premarital attitudes
Walsh et al., 1976	1970	19	23	66	0.80	Intercourse incidence
					0.58	Premarital attitudes
Weidner & Griffitt, 1983	1981	20	72	70	0.84	Sexual permissiveness
Wells & Franken, 1987	1985	22	67	65	−0.19	Attitudes toward homosexuality
Westney et al., 1984	1982	10	46	55	0.39	Intercourse incidence
					−0.15	Kissing incidence
					0.68	Petting incidence
Whatley & Appel, 1973	1966	20	74	124	0.08	Double standard
					0.00	Premarital attitudes
Whatley & Appel, 1973	1970	20	91	209	−0.49	Premarital attitudes
					0.05	Double standard

Table 1 (*continued*)

Study	Data year[a]	Mean age	*n*		*d*[b]	Measure
			Males	Females		
Wheeler & Kilmann, 1983	1981	34	35	35	−0.28	Sexual satisfaction
					0.33	Sexual permissiveness
					−0.05	Masturbation attitudes
Whitley, 1988	1986	20	185	163	0.52	Intercourse incidence
Who's Who Among American High School Students, 1985	1985	17	735	1,308	0.01	Intercourse incidence
Who's Who Among American High School Students, 1990	1990	16	640	1,360	−0.14	Intercourse incidence
Williams & Jacoby, 1989	1987	20	69	50	0.05	Intercourse incidence
					0.41	Homosexual incidence
					−0.11	Oral sex incidence
Williams & Jacoby, 1989	1987	20	116	130	−0.76	Homosexual incidence
					0.24	Oral sex incidence
					0.05	Intercourse incidence
Wood, 1990	1972	41	778	759	0.45	Premarital attitudes
Wood, 1990	1973	41	681	781	0.10	Attitudes toward homosexuality
					−0.03	Lesbian and gay male civil liberties
					0.39	Extramarital attitudes
Wood, 1990	1974	41	667	763	−0.05	Lesbian and gay male civil liberties
					0.31	Premarital attitudes
					0.31	Extramarital attitudes
					0.00	Attitudes toward homosexuality
Wood, 1990	1975	37	641	786	0.36	Premarital attitudes
Wood, 1990	1976	38	655	795	0.16	Extramarital attitudes
					−0.09	Attitudes toward homosexuality
					0.10	Lesbian and gay male civil liberties
Wood, 1990	1977	44	673	807	0.08	Attitudes toward homosexuality
					0.03	Lesbian and gay male civil liberties
					0.33	Extramarital attitudes
					0.37	Premarital attitudes
Wood, 1990	1978	38	625	869	0.28	Premarital attitudes
Wood, 1990	1980	39	627	794	0.23	Extramarital attitudes
					0.08	Attitudes toward homosexuality
					0.00	Lesbian and gay male civil liberties
Wood, 1990	1982	39	617	836	0.14	Extramarital attitudes
					0.06	Lesbian and gay male civil liberties
					0.28	Premarital attitudes
					−0.13	Attitudes toward homosexuality
Wood, 1990	1983	40	672	889	0.31	Premarital attitudes
Wood, 1990	1984	40	618	841	0.13	Attitudes toward homosexuality
					0.06	Lesbian and gay male civil liberties
					0.53	Extramarital attitudes
Wood, 1990	1985	38	669	820	0.25	Premarital attitudes
					0.26	Extramarital attitudes
					0.00	Attitudes toward homosexuality
					−0.05	Lesbian and gay male civil liberties
Wood, 1990	1986	44	609	816	0.34	Premarital attitudes
Wood, 1990	1987	44	623	804	0.00	Attitudes toward homosexuality
					0.02	Lesbian and gay male civil liberties
					0.16	Extramarital attitudes
Wood, 1990	1988	44	399	550	0.34	Premarital attitudes
					−0.09	Lesbian and gay male civil liberties
					0.33	Extramarital attitudes
					−0.05	Attitudes toward homosexuality
Wood, 1990	1989	44	461	606	−0.04	Lesbian and gay male civil liberties
					0.00	Extramarital attitudes
					0.26	Frequency of intercourse
					0.26	Premarital attitudes
					−0.13	Attitudes toward homosexuality
Yarber & Greer, 1986	1984	19	36	47	−0.12	Number of sexual partners
					−0.06	Homosexual incidence
					0.26	Masturbation incidence

(table continues)

Table 1 (*continued*)

Study	Data year[a]	Mean age	*n* Males	*n* Females	*d*[b]	Measure
Young, 1986	1984	19	262	227	0.43	Intercourse incidence
Young, 1986	1977	20	41	50	0.63	Intercourse incidence
					0.68	Oral sex incidence
Zabin et al., 1986	1984	15	441	486	0.33	Intercourse incidence
Zabin et al., 1986	1984	15	626	1,004	0.75	Intercourse incidence
Zuckerman, 1973	1972	19	83	101	0.10	Oral sex incidence
					0.37	Petting incidence
					0.33	Intercourse incidence
Zuckerman et al., 1976	1974	20	123	111	0.00	Intercourse incidence

[a] Year that data were collected. [b] Positive values of *d* reflect male respondents having more permissive or positive attitudes toward premarital intercourse, homosexual behavior, extramarital intercourse, and masturbation; greater endorsement of the double standard; higher levels of anxiety, fear, guilt; higher levels of sexual satisfaction; younger age at first intercourse; greater number of sexual partners; and higher incidence of sexual experiences (kissing, petting, intercourse, frequency of intercourse, masturbation, oral sex, and homosexual experience). Negative values of *d* reflect female respondents having more permissive or positive attitudes toward premarital intercourse, homosexuality, extramarital intercourse, and masturbation; greater endorsement of the double standard; higher levels of anxiety, fear, or guilt; higher levels of sexual satisfaction; younger age at first intercourse; greater number of sexual partners; and higher incidence of sexual experiences (kissing, petting, intercourse, frequency of intercourse, masturbation, oral sex, and homosexual experience).

marital attitudes and anxiety, fear, or guilt: Males reported greater acceptance of extramarital intercourse and lower levels of anxiety, fear, or guilt than did females. The gender difference for masturbation attitudes also showed that males reported slightly more favorable attitudes than did females, although this difference was trivial.

Surprisingly, a negative *d* value was obtained for attitudes toward the double standard. This negative value reflects a higher level of acceptance among females than among males. We expected that males would be more likely than females to endorse a double standard in sexuality. Perhaps this finding was partially due to the years in which the studies were conducted (the most recent being 1977) and the age of the sample (the oldest being 20 years). Finally, gender differences were essentially nonexistent for both attitudes toward homosexuality and for attitudes toward civil liberties for lesbians and gay men.

In regard to the gender differences for the sexual behavior measures, eight of the nine measures reflected greater experience for males than females. Not surprisingly, the measures of two behaviors that normally precede intercourse, kissing and petting, showed trivially small gender differences. Moderately large gender differences were revealed for incidence of intercourse, age of first intercourse, number of sexual partners, and frequency of intercourse. Males reported a higher incidence of intercourse, a younger age at which they first experienced intercourse, more frequent intercourse, and a larger number of sexual partners than did females. A moderate *d* value was also revealed for homosexual incidence: Males reported a greater incidence than did females.

The largest gender difference revealed among the sexual behavior measures was for masturbation incidence. This difference far overshadowed all other measures examined in this study, with the possible exception of attitudes toward casual premarital intercourse. That females reported a significantly lower incidence of masturbation than did males was especially interesting given the small gender difference revealed for attitudes toward masturbation.

Regression analysis. Homogeneity analyses using procedures specified by Hedges and Becker (1986) indicated that effect sizes were nonhomogeneous for all of the sexual attitudes and behavior measures except for homosexual civil liberties (see Table 2). Therefore, we concluded that the effect sizes were heterogeneous, and we conducted multiple regression analyses for each of the attitude and behavior measures (excluding homosexual civil liberties) to examine sources of variation in effect sizes (Hedges & Becker, 1986). Average age of the respondents and year of data collection were used as predictor variables in all of the analyses except for the analysis of the attitude variable labeled *intercourse—engaged.* In this instance, only data year could be used as a predictor variable because all participants had a mean age of 20. Table 3 contains the partial correlations of the *d* values with data year and with mean age that were revealed in the regression analyses. Partial correlations are reported to eliminate confoundings between age of subjects, year of data collection, and birth cohort. The partial correlation with age, for example, controls for year of data collection.

Changes in gender differences as a function of year. Eleven of the 21 sexual attitude and behavior measures were significantly correlated with year of data collection. Many of these correlations reflected trends toward smaller differences between males and females over time. For example, gender differences in attitudes toward premarital intercourse in general and attitudes toward premarital intercourse in committed and engaged relationships were significantly negatively associated with year of data collection. These negative correlations reflected a change from large gender differences reported during the 1960s (premarital attitudes, $d = .79$; intercourse—committed, $d = .91$; intercourse—engaged, $d = .80$) to smaller gender differences reported during the 1980s (premarital attitudes, $d = .32$; intercourse—committed, $d = .48$; intercourse—engaged, $d = .17$). A similar, though less pronounced, pattern was revealed for attitudes toward extramarital intercourse (1970s, $d = .33$; 1980s, $d = .25$). These results suggest that although gender dif-

Table 2
Magnitude of Gender Differences as a Function of Measure

Measure	*k*	*d*	95% confidence interval for *d*	*H*
Premarital attitudes	46	0.37	0.35 to 0.40	321*
Intercourse—casual	10	0.81	0.75 to 0.87	131*
Intercourse—committed	10	0.49	0.44 to 0.53	44*
Intercourse—engaged	5	0.43	0.32 to 0.54	36*
Attitudes toward homosexuality	28	−0.01	−0.04 to 0.02	187*
Homosexual civil liberties	14	−0.00	−0.03 to 0.02	15
Extramarital attitudes	17	0.29	0.26 to 0.32	87*
Sexual permissiveness	39	0.57	0.55 to 0.60	474*
Anxiety, fear, or guilt	11	−0.35	−0.44 to −0.26	99*
Sexual satisfaction	15	−0.06	−0.09 to −0.03	65*
Double standard	7	−0.29	−0.37 to −0.21	29*
Masturbation attitudes	12	0.09	0.04 to 0.14	86*
Kissing incidence	15	−0.05	−0.10 to 0.01	69*
Petting incidence	28	0.11	0.07 to 0.15	207*
Intercourse incidence	135	0.33	0.32 to 0.35	1,087*
Age at first intercourse	8	0.38	0.30 to 0.45	22*
Number of sexual partners	12	0.25	0.19 to 0.32	22*
Frequency of intercourse	11	0.31	0.27 to 0.36	98*
Masturbation incidence	26	0.96	0.92 to 1.00	380*
Homosexual incidence	19	0.33	0.30 to 0.37	175*
Oral sex incidence	21	0.10	0.05 to 0.15	124*

Note. *k* represents the number of effect sizes; *H* is the within-group homogeneity statistic (Hedges & Becker, 1986).
* Significant nonhomogeneity at $p < .05$, according to the chi-square test.

ferences in these sexual attitudes are becoming smaller over the years, males continue to hold more permissive attitudes toward premarital and extramarital intercourse than do females. However, sexual permissiveness and attitudes toward casual intercourse, both of which showed substantial gender differences (see Table 2), were not significantly associated with year, suggesting that they have remained fairly constant over time.

In terms of sexual behaviors, significant negative correlations were revealed for petting incidence, intercourse incidence, number of sexual partners, frequency of intercourse, and masturbation incidence. Again, these correlations reflect moderate-to-large gender differences in data collected during the 1960s (petting, $d = .66$; intercourse incidence, $d = .41$; number of sexual partners, $d = .33$; frequency of intercourse, $d = .34$; and masturbation incidence, $d = 1.07$) and smaller gender differences in data collected during the 1980s (petting, $d = .02$; intercourse incidence, $d = .33$; number of sexual partners, $d = .17$; frequency of intercourse, $d = .14$; and masturbation incidence, $d = .60$). Although the correlation between age at first intercourse and data year did not achieve significance (perhaps because of the small number of studies), it too showed a negative correlation, suggesting that gender differences on this measure have decreased over time as well. Note that although gender differences in these sexual behaviors have decreased over the years, a sizable gender difference remained for masturbation incidence in the most recent studies.

Although most of the significant correlations revealed in the regression analyses reflected reductions in gender differences, two of the measures were significantly associated with data year for alternate reasons. A significant negative correlation was obtained between data year and the double standard. However, because the *d* value for attitudes toward the double standard was negative across all studies (reflecting greater female than male endorsement), the significant negative correlation obtained in the regression analysis reflected an increase in gender differences across years. Although this finding was unexpected, as mentioned previously, this might reflect the particular range of years in which the data were collected. The most recent year of data collection was 1977; in essence, none of the studies were very recent. In addition, because these statistics represented changes in the magnitude of gender differences, it was unclear whether this significant correlation with data year reflected trends toward greater female acceptance of the double standard, lesser male acceptance of the double standard, or both.

A significant negative correlation was obtained also for attitudes toward homosexuality. However, because gender differences on this measure were almost nonexistent across studies (see Table 2), this negative correlation reflected a change from a trivially small difference favoring males in the studies conducted before and during 1975 ($d = .04$) to a trivially small difference favoring females after 1975 ($d = -.05$).

Changes in gender differences as a function of age. Significant correlations between *d* values and the mean age of sample were revealed for 11 of the 21 measures (see Table 3). Many of the measures associated with attitudes toward intercourse and intercourse behaviors showed decreases in gender differences with increasing age. For example, sexual permissiveness, attitudes toward extramarital intercourse, and attitudes toward premarital intercourse under casual and committed circumstances were significantly negatively associated with the age of the sample. Given the age ranges covered by most of the

Table 3
Partial Correlations Between Magnitude of Gender Differences and Data Year and Age of Respondent

Measure	*pr* for data year[a]	Year range	*pr* for age[b]	Age range	Q_E	*k*
Premarital attitudes	−.19**	1965–1989	−.11	14–44	292.44*	46
Intercourse—casual	−.05	1966–1983	−.77**	14–43	41.89*	10
Intercourse—committed	−.45**	1966–1987	−.47**	15–43	33.95*	10
Intercourse—engaged[c]	−.82**	1966–1983	—	20	11.77*	5
Attitudes toward homosexuality	−.47**	1970–1989	.69**	14–44	92.13*	28
Homosexual civil liberties	.03	1970–1989	.16	19–44	14.74	14
Extramarital attitudes	−.36**	1970–1989	−.31**	14–44	67.02*	17
Sexual permissiveness	.09	1967–1987	−.40**	13–43	338.45*	39
Anxiety/fear/guilt	.10	1971–1987	−.10	13–43	97.26*	11
Sexual satisfaction[d]	.07	1974–1987	.26	20–47	21.36*	14
Double standard	−.42*	1966–1977	−.41*	14–20	21.73*	7
Masturbation attitudes	−.12	1970–1983	.45**	18–43	62.91*	12
Kissing incidence	−.17	1968–1987	.03	10–22	66.49*	15
Petting incidence	−.25**	1965–1987	−.11	10–22	190.15*	28
Intercourse incidence	−.26**	1963–1990	−.33**	10–27	956.51*	135
Age at first intercourse	−.30	1974–1986	.01	19–25	19.77*	8
Number of sexual partners	−.45*	1973–1985	−.17	16–25	16.91	12
Frequency of intercourse	−.56**	1969–1989	.65**	19–86	46.61*	11
Masturbation incidence	−.57**	1969–1986	.54**	14–43	136.18*	26
Homosexual incidence	.08	1970–1987	.17*	14–43	170.52*	19
Oral sex incidence	−.11	1972–1987	−.09	16–27	121.79*	21

Note. Partial correlations were obtained from entering both data year and age of sample into a regression equation simultaneously; Q_E represents the error sum of squares from the regression equation (Hedges & Olkin, 1985); *k* represents the number of effect sizes.
[a] Partial correlations are between year of data collection and magnitude of the gender difference, *d*, controlling for age. For positive values of *d*, positive correlations generally indicate larger gender differences over time, and negative correlations indicate smaller gender differences over time. For negative values of *d*, negative correlations generally indicate larger gender differences over time, and positive correlations indicate smaller gender differences over time. [b] Partial correlations are between age and magnitude of the gender difference, *d*, controlling for year of data collection. For positive values of *d*, positive correlations generally indicate larger gender differences with age, and negative correlations indicate smaller gender differences with age. For negative values of *d*, negative correlations generally indicate larger gender differences with age, and positive correlations indicate smaller gender differences with age. [c] Data year was the only variable entered in the regression equation for intercourse—engaged because all samples had a mean age of 20. [d] One effect size was excluded from the regression analysis because the mean age of the sample was 86 (almost 40 years older than the next oldest sample), which created an undue influence on the correlation coefficient.
* Significant nonhomogeneity at $p < .05$, according to the chi-square test.

studies, this generally reflected trends from adolescence to young adulthood. However, moderate gender differences remained even among respondents greater than 25 years of age (sexual permissiveness, $d = .42$; extramarital attitudes, $d = .28$; intercourse—casual, $d = .46$; intercourse—committed, $d = .46$). Because gender differences associated with attitudes toward intercourse showed significant decreases with age, it is not surprising that incidence of intercourse was also negatively associated with the age of the sample. However, as with attitudes associated with intercourse, the gender differences in incidence of intercourse among the older samples (those greater than 20 years) showed that men continued to have a greater incidence than did women ($d = .20$).

Two surprising correlations were revealed in these analyses, considering the negative correlations between age and many of the intercourse-related measures. First, a negative correlation was revealed between age and the double standard. Samples under 18 years of age showed a small negative *d* value ($d = -.06$), and samples over 18 years of age showed a moderate, negative *d* value ($d = -.33$). This negative correlation should be interpreted with care, however, given the small number of studies involved ($k = 7$) and the young age of the samples overall, the oldest having a mean age of 20. The second surprising correlation was a positive association between age and the magnitude of gender differences in frequency of intercourse. An examination of the *d* values for different categories of age groups showed that the increases in gender differences on this measure reflected almost nonexistent gender differences for college-age samples (19–25 years; $d = .01$) but considerably larger gender differences among samples greater than 25 years ($d = .45$).

Significant positive correlations were obtained also between age and attitudes toward masturbation and between age and masturbation behaviors. The age trend in attitudes toward masturbation occurred because females in the youngest samples (18 years and younger) reported more positive attitudes toward masturbation than did males ($d = -.20$), whereas the reverse was true for the oldest samples ($d = .15$). Despite the significant correlation with age, gender differences in attitudes toward masturbation were small overall. However, gender differences in incidence of masturbation were also significantly associated

with age, with this correlation reflecting a trend from moderately large differences among the youngest samples (18 years and younger, $d = .44$) to very large differences among the oldest samples (greater than 25 years, $d = 1.33$). It is interesting to contrast the associations of age with intercourse-related variables and with masturbation-related variables. It appears that with age, males and females become more alike in terms of intercourse but more divergent in terms of masturbation.

Finally, the regression analyses showed significant positive correlations between the age of the sample and gender differences in attitudes toward homosexuality and gender differences in homosexual incidence. The findings for attitudes toward homosexuality occurred because in the youngest samples (18 years and younger), females expressed more positive attitudes toward homosexuality than did males ($d = -.26$), whereas in the oldest samples (25 years and older), gender differences were close to zero ($d = .04$). The findings for homosexual incidence occurred because the gap between the incidence for males and the incidence for females increased slightly from the youngest samples ($d = .29$) to the oldest samples ($d = .38$).

Discussion

This meta-analysis documented two large gender differences in sexuality: the incidence of masturbation ($d = .96$) and attitudes toward casual premarital sex ($d = .81$). As we discuss below, these differences are large whether judged by Cohen's (1969) guidelines or by comparison with the magnitude of gender differences in other areas such as mathematics performance or verbal ability.

At the same time, we found a great range in the magnitude of gender differences in other aspects of sexual attitudes and behaviors. At the other end of the spectrum, there were no gender differences in the following: attitudes about homosexuality, attitudes about civil liberties for gay men and lesbians, sexual satisfaction, attitudes toward masturbation, incidence of kissing, and incidence of oral sex. In the middle, there were small-to-moderate gender differences in attitudes toward premarital intercourse when the couple was engaged or in a committed relationship (males were more permissive, $d = .43$ and .49 respectively); attitudes toward extramarital sex (males were more permissive, $d = .29$); sexual permissiveness (males were more permissive, $d = .57$); anxiety or guilt about sex (females were more anxious, $d = -.35$); endorsement of the double standard (more endorsement by females, $d = -.29$); incidence of sexual intercourse (higher incidence with males, $d = .33$); age of first intercourse (males were younger, $d = .38$); number of sexual partners (males reported more partners, $d = .25$); frequency of intercourse (greater reported frequency for males, $d = .31$); and incidence of homosexual behavior (greater incidence for males, $d = .33$).

Assessing trends over time, there were significant correlations between the magnitude of gender differences and the year of data collection. Almost all of the significant effects showed gender differences becoming smaller over time, especially in regard to attitudes toward premarital sex when the couple was engaged, attitudes toward homosexuality, number of sexual partners, frequency of intercourse, and incidence of masturbation.

Examination of age trends was limited in general by the data to shifts from adolescence to early adulthood. Over this age range, gender differences narrowed with age, especially for attitudes toward casual premarital sex, attitudes toward extramarital intercourse, and sexual permissiveness. Gender differences grew larger with age for frequency of intercourse and incidence of masturbation.

One virtue of meta-analysis is that it can identify gaps in the data in a particular field. The analysis of age trends and an inspection of Table 1 reveal that studies of gender differences in sexual behavior rely far too heavily on data derived from 18- to 20-year-olds (with the exception of the Wood, 1990, data, which is from a national opinion survey on attitudes). If the developmental processes underlying gender differences in sexuality are to be understood, younger age groups and older age groups must be studied.

One methodological issue must be noted. In all of the studies reviewed, data were collected by self-report methods rather than by direct observations of behavior. What we gathered, then, was evidence of gender differences in *reported* sexual attitudes and behaviors. It is possible, therefore, that there are no actual gender differences in sexual attitudes and behaviors. Rather, the gender difference is in reporting tendencies. Males may have a tendency to exaggerate their sexual experiences (at least the socially approved ones). Females may underreport their sexual experiences. Either or both trends could create gender differences in self-reports where no actual differences in behaviors or attitudes exist or could magnify a small gender difference. It is beyond the scope of this review to address this problem, because it is generally unresolved in the methods used by sex researchers. Nonetheless, readers should be aware of this possible limitation in the data.

Note also that this study examines patterns of attitudes and behaviors within a particular cultural context, namely, the United States during the 1960s through the 1980s. We make no claim that these patterns would be found in other cultures or that they would have characterized American culture earlier in its history. The introduction of the birth control pill in 1960 and the availability of other highly effective methods of contraception had a profound effect. These developments are usually credited as being major factors in the liberation of female sexuality, by allowing women to engage in sexual intercourse (marital or nonmarital) with little fear of pregnancy. The effect should be to narrow the gender gap. The cultural context for the studies reviewed here also includes a rapidly rising divorce rate; the legalization of abortion; and, in the 1980s, an epidemic of sexually transmitted diseases, particularly AIDS and herpes, all of which affect the health of the infected person as well as being potentially lethal to offspring.

Theoretical Views

All five theories that were considered in this review agree in their predictions that males will have a greater number of sexual partners and more permissive attitudes toward casual sex than will females. The results of the meta-analysis are consistent with these predictions for attitudes and, to some extent, for behaviors. Gender differences in attitudes toward casual sex were large ($d = .81$). Gender differences in number of partners were in the direction predicted but were surprisingly small ($d = .25$).

There are two possible explanations for the small gender difference in number of sexual partners. The advent of highly ef-

fective contraceptives, dating from the introduction of the birth control pill in 1960, may well have changed the nature of reproductive strategies for females. When sexual activity does not involve reproduction, then, in the framework of sociobiology, females can have as many partners as males without squandering precious eggs or making unwise parental investments. This, of course, assumes a cognitive approach to decisions about sexual behavior that is missing in sociobiology. A second explanation comes from the work of DeLamater and MacCorquodale (1979), who found, in a large survey on premarital sexuality, that gender role definitions were not good predictors of patterns of premarital sexuality; the patterns were predicted far better by the nature of the couple's relationship. If this is the case, gender differences in the incidence of premarital sex might well not be large. DeLamater and MacCorquodale's findings and interpretations are consistent with social-psychological models such as Deaux and Major's (1987) that stress the proximal (i.e., situational) determinants of gender differences in behavior over the distal determinants (e.g., early childhood experiences, gender role socialization, evolutionary selection).

Gender Difference in Masturbation

It is striking that the largest gender difference was in the incidence of masturbation, yet only one of the theories, script theory, addressed this point. It will be important for future theories to account for this well-established phenomenon. A number of questions will need to be addressed in the process, all revolving around the issue of the meaning of masturbation, both from a functional or biological point of view and from a psychological point of view. Masturbation is not a behavior that leads to reproduction, so theories such as sociobiology that account for sexual phenomena in terms of reproductive strategy may not account well for patterns of masturbation. On the other hand, masturbation may be a manifestation of generalized sex drive or libido, which influences both reproductive sexual behaviors and nonreproductive sexual behaviors. In any event, a gender difference of this magnitude is worthy of far more theoretical consideration.

Magnitude of Gender Differences

We have offered our own interpretation of the magnitude of the gender differences obtained in this meta-analysis. In keeping with Cohen (1969), we interpreted effect sizes, *d*, of .80 or greater as large effects, those around .50 as moderate, and those around .20 as small. We also interpreted effect sizes less than .10 to be trivial or no difference. The Cohen scheme for interpretation is controversial, and readers may want to form their own interpretations.

An alternative framework for interpretation involves comparing the magnitude of the gender differences found in this meta-analysis with the magnitude of gender differences found in other meta-analyses or with the magnitude of effects in meta-analyses outside the realm of gender issues. For example, for gender differences in verbal ability, $d = -.11$, with the difference favoring females (Hyde & Linn, 1988). For gender differences in mathematics performance, $d = .15$, favoring males (Hyde et al., 1990). For gender differences in spatial ability, *d* ranges between .13 and .73, depending on the type of spatial ability being measured (Linn & Petersen, 1985). Gender differences in aggressive behavior yielded $d = .50$ in one meta-analysis (Hyde, 1984) and .29 in another (Eagly & Steffen, 1986). In the realm of nonverbal behaviors, Hall (1984) found $d = .42$ for gender differences in decoding nonverbal cues.

By comparison with these other studies, the magnitude of the largest gender differences in sexuality (incidence of masturbation, $d = .96$, and attitudes toward causal sex, $d = .81$) were clearly large, indeed larger than any of the gender differences found in these other studies. On the other hand, there was a broad range of magnitudes of gender differences in the present meta-analysis, and other gender differences were small or nonexistent.

Conclusion

In an era in which gender differences in sexuality are highlighted and male–female conflicts over these issues are exacerbated by events such as the Anita Hill and Clarence Thomas hearings on sexual harassment, psychologists should recognize these gender differences as an important topic of inquiry. The results of this meta-analysis are useful in sorting out the larger differences from the smaller ones. The gender difference in attitudes toward casual sex is large and was predicted well by all of the theories reviewed in this article. Future research could profitably examine the consequences of this large gender difference; it may help to explain, for example, why the same behavior is interpreted as harassment by a woman and reasonable or even flattering behavior by a man.

Gender differences in masturbation need further empirical and theoretical investigation, and their clinical applications are already being explored. Gagnon and Simon (1973) may have been correct when they argued, from their script perspective, that this gender difference was the origin of most other gender differences in sexuality. On the other hand, other mechanisms might be involved, which need to be understood. The gender difference in masturbation has applications in the clinical realm. Orgasmic dysfunction, which is common in women and rare in men, is often treated by sex therapists with a program of directed masturbation (Andersen, 1983; LoPiccolo & Lobitz, 1972; LoPiccolo & Stock, 1986). Essentially, the therapy provides women with masturbation experience that they have missed.

Many gender differences that are moderate in magnitude, such as those in sex guilt and in sexual permissiveness, will benefit from further research. Theoretical models that focus on proximal (situational) causes of gender differences (e.g., Deaux & Major, 1987) have received little application in the area of sexuality but hold promise for future work.

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(*Appendix follows on next page*)

Appendix

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