

Is There a Gender Difference in Strength of Sex Drive? Theoretical Views, Conceptual Distinctions, and a Review of Relevant Evidence

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The sex drive refers to the strength of sexual motivation. Across many different studies and measures, men have been shown to have more frequent and more intense sexual desires than women, as reflected in spontaneous thoughts about sex, frequency and variety of sexual fantasies, desired frequency of intercourse, desired number of partners, masturbation, liking for various sexual practices, willingness to forego sex, initiating versus refusing sex, making sacrifices for sex, and other measures. No contrary findings (indicating stronger sexual motivation among women) were found. Hence we conclude that the male sex drive is stronger than the female sex drive. The gender difference in sex drive should not be generalized to other constructs such as sexual or orgasmic capacity, enjoyment of sex, or extrinsically motivated sex.

If the world were designed for the primary goal of maximizing human happiness, the sexual tastes of men and women would match up very closely. What could be more ideal than perfect attunement with one's mate, so that both people feel sexual desire at the same times, to the same degrees, and in the same ways? Yet there is ample evidence that romantic partners are sometimes out of synchrony with each other's sexual wishes and feelings. The continuing market for sexual advice, sex therapy, couple counseling, and similar offerings is a testimony to the fact that many people are not perfectly satisfied with their sex lives even within committed relationships. Infidelity and divorce may also sometimes reflect sexual dissatisfaction.

The focus of this article is on one potential source of sexual disagreement. Specifically, in this article we review evidence pertaining to the question of whether men and women differ (on average) in the strength of sex drive. As we suggested, the ideal would be that the average sex drive would be equally strong in men and women, in which case individual variations would be the only obstacle to marital harmony, and many people could find a partner with a fairly precise match of sexual inclinations. Unfortunately, life may not conform to such ideals, and if one gender differs from the other in average strength of sex drive, pervasive patterns of potential conflict could result.

The importance of the question of gender differences in sex drive goes beyond utopian dreams of

equality. If one gender generally experiences stronger or more frequent sexual desires, then this pattern is likely to become incorporated into the society's conceptions of sex roles. Interaction patterns within ongoing relationships, and perhaps outside of relationships too, will likely be shaped in recognition of the greater desires of one gender. In contrast, if the two genders are basically equal in sex drive, then negotiating a heterosexual relationship can focus on other issues.

A second set of implications that attend the question of differential sex drive is concerned with reliance on norms for self-understanding and self-evaluation. Suppose a particular woman desires sex more often than her husband. If this is a typical pattern that characterizes most relationships, she should probably accept her greater desire as a standard fact of life, and certainly there is no reason for her to engage in self-doubts or guilt or to wonder what is wrong with her. In contrast, if the typical pattern is the opposite (greater desire among husbands), then she may more appropriately wonder why her situation is different. Undoubtedly the worst outcome is if a woman reaches a self-critical view based on a false understanding of what the actual norms and typical patterns are such that she thinks something is wrong with her—even though her relationship in fact shows the same pattern that the majority of couples experience. Improved public knowledge would reduce such needless suffering.

A third set of implications concerns a broader understanding of social exchange and interaction patterns in romantic and sexual relationships. In any given relationship, whichever partner wants sex more is in a weaker position, insofar as greater desire creates depend-

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ency on the partner (see Waller & Hill, 1938/1951; also Baumeister & Tice, 2001). To the extent that sex can serve as a medium for social exchange involving any other social or material resources, it may influence the entire relationship. Gender roles and marital equity will depend on whether other resources are indeed exchanged in a way to make up the imbalance in sexual interest. Thus, unequal sex drives may shape the broader marital relationship in ways that go far beyond the bedroom.

The question of whether men differ from women in the average strength of sex drive is both immediate and elusive. It is immediate in that almost every person can have some direct experience through marriage and other sexual relationships. It is elusive in that opinions differ widely. When we told people we were studying whether men and women differ in strength of sex drive, most people responded by saying that the answer was obvious—but when we cautiously asked them what the obvious answer was, we heard all three possible answers (i.e., men higher, women higher, no difference) endorsed.

The existence of different opinions on this matter is not confined to laypersons. Writings for the general public have advocated polar opposite views, ranging from Acton's (1857) widely quoted assertion that "the majority of women (happily for society) are not very much troubled with sexual feeling of any kind" (p. 163) to Ehrenreich's (1999) authoritative assertion that woman, not man, is biologically destined to be "the sexual powerhouse of the species" (p. 64).

We also consulted leading textbooks on sexuality to find whether any consensus existed on the topic about gender differences in sex drive, but the answer appeared to be no. Crooks and Baur (1999) dismissed the view of stronger male sex drive as erroneous: "A long-standing assumption in many Western societies is the mistaken belief that women are inherently less sexually inclined than men" (p. 68). Thus, the textbook acknowledged a view that men have a stronger sex drive than women, but it rejected that view as having been discredited. The possibility that the female sex drive is stronger than the male was not even considered in that work. Masters, Johnson, and Kolodny (1995) also acknowledged that stereotypes exist, usually depicting males as having more sexual desire than females, but the authors carefully avoided the question of whether the stereotypes have any factual basis. Allgeier and Allgeier (2000) likewise acknowledged the existence of a stereotype that men have larger appetites for sex, but they too declined to say whether the stereotype had any factual basis, and their treatment of gender differences in sexual arousability clearly favored the null hypothesis of no difference. The final textbook we consulted was Hyde and DeLamater (1997), who included a subsection entitled "Greater Sex Drive in Women?" As the title implies, it was concerned only with the possibility that women have a stronger sex

drive as opposed to the null hypothesis of no difference. The possibility that men have a stronger sex drive was not considered. They concluded that future generations may recognize that women have an innately stronger sex drive than men, but at present they thought the limited evidence available favors the conclusion that there is no gender difference in sex drive.

To summarize, these four leading textbooks either avoid the issue of gender difference in sex drive or cautiously suggest that there is no difference. If a difference were to emerge, these textbooks disagree as to which gender will ultimately stand revealed as having the stronger sex drive.

The very breadth of the question about differences in sex drive makes it difficult for a single empirical study to provide a conclusive answer. There is no single optimal way to measure strength of sex drive, and so multiple measures are needed. Nor is there any particular sample that is perfect, so multiple studies with multiple samples would be helpful. Ideological interest in the question of differential sex drive also raises the possibility that experimenter effects (such as by asking questions in certain ways) could produce artifactual results in a single study. We think the only viable way to address the question of differential sex drive is in a broad literature review that examines many studies by different investigators, using different methods and measures, and with different samples. Convergence of evidence across a range of studies would seemingly be required for drawing a firm conclusion. This article is an attempt to provide such a review.

To forestall possible misunderstandings or improper applications of our conclusions, it seems essential to state that we do not see any obvious value judgment regarding the desirability of a stronger versus weaker sex drive. During the height of the "sexual revolution" in the 1970s, it was briefly fashionable to speak as if more sexual desire was always better, but the sobering aftermath of that period of sexual license has presumably led to a more balanced view. Either extreme of sexual motivation can certainly be maladaptive and problematic, but there is a broad middle range in which it is probably meaningless to speak of "better" or "worse," and we believe the average man and the average woman both fall within that range. Hence we do not think that any likely conclusion about gender differences in sex drive would mean that one gender was superior to the other.

Theoretical and Operational Definitions

Theoretical debates, value judgments, and general confusion may arise from mixing or exchanging different concepts so that seemingly opposite sides are not

actually talking about the same thing. There are probably several relevant concepts that may well be fully independent of each other, and so it is vital to make clear conceptual distinctions.

As we understand the term, the *sex drive* refers to the sexual motivation, usually focused on craving for sexual activity and sexual pleasure. Desire is probably the most precise rendition. A person with higher sex drive would be one with more intense or more frequent desires, or both, for sex. To be sure, one can profitably make finer distinctions. Hill (1997) observed that people's interest in sexual activity can have multiple sources, such as desire for relief from stress, desire to procreate, or enhancing feelings of power. Our analysis, however, focuses specifically on the desire for sex for its own sake, and therefore a desire for sex as a means toward procreation or toward other nonsexual goals is not part of our concept of sex drive. Strictly speaking, desiring sex for the sake of distal goals would fall in the category of extrinsic motivation (see Deci, 1971; Lepper & Greene, 1978), whereas desiring sex for its own sake constitutes intrinsic motivation. We consider extrinsic motivations for sex briefly after reviewing the evidence about intrinsic motivation.

It is also important to recognize that the term *drive* does not necessarily refer to a biologically innate tendency. One may speak of someone's drive in the sense of ambition within a particular job and presumably much of that is acquired by socialization and experience. In the history of psychology, the term *drive* was adopted as a way of avoiding the implication of innateness that the term *instinct* entailed. To be sure, where biologically innate motivations exist, they undoubtedly contribute to the level of drive in particular individuals, and most theorists probably regard some degree of sexual motivation as innate. Still, any findings of gender differences in sex drive (motivation) should not automatically be interpreted as reflecting innate differences and especially not immutable differences.

Another relevant concept is *sexual capacity*. This refers to the maximum limit of sexual activity that someone can do. A person with higher sexual capacity would be one with greater ability to have more sex, such as with more different partners, more often, or for a longer period of time. Drive and capacity are separate constructs. Men are presumably as capable as women of dieting, but they appear to be less driven to do so. Likewise, women are as capable as men of watching televised sports events, but they appear to be somewhat less motivated to do so. Any evidence of greater sexual capacity by either gender would not therefore necessarily have any bearing on the question of differential sex drive. Capacity is however important in its own right.

A final concept is *sexual enjoyment*. This refers to the amount of pleasure that one derives from sexual activity. A person with higher sexual enjoyment would

be one who gets more enjoyment or pleasure out of sex. Probably the yield of pleasure varies considerably within persons across different situations and episodes (i.e., most people probably experience both relatively good and relatively bad sex at some point or other), but there may still be individual differences in average degree of enjoyment. Enjoyment is an outcome and is therefore conceptually quite different from sex drive, although in general higher drive would plausibly be correlated with higher enjoyment.

Our primary focus is on the sex drive and thus the strength of motivation. Operationally, we reason that higher sex drive will result in a broad variety of behavioral manifestations because the relatively strong motivation should produce more frequent and more intense efforts to reach satisfaction. Extremely strong motivations override (at least temporarily) other motivations, and the result is that behavior becomes almost entirely organized by a supremely powerful motivation. In contrast, a motivation that is extremely weak will yield precedence to every other motivation, and as a result it will not produce much in the way of behavioral results. Hence we have sought both subjective and objective indexes of strength of sex drive.

Evidence: Strength of Sex Drive

The sex drive is best understood in terms of the frequency and intensity of desire. The question of gender differences in sex drive thus refers to whether one gender desires sex more than the other.

The question of gender differences in sex drive may be best approached by stepping away briefly from gender and considering how two people of the same gender would be observably different if their sex drives differed in strength. In other words, in what specific ways would a woman with a strong sex drive differ from a woman with a weak sex drive? On an a priori basis, one would expect the difference in motivation to be reflected in desired frequency of sex, desired variety of sex acts and partners, frequency of fantasy, frequency of masturbation, number of partners, frequency of thinking about sex, willingness to make sacrifices in other spheres to obtain sex, and the like. We shall therefore examine evidence about gender differences across this range of relevant variables. Probably many single findings would be subject to alternative explanations instead of pointing unambiguously to differential sex drive. It is therefore necessary to find convergence across many studies and many operationalizations to rely on the rule of parsimony for drawing conclusions about the strength of sex drive.

Our strategy for locating sources was roughly as follows. As we have just mentioned, sex drive is not a unitary variable with only one manifestation; rather, it

is our view that a variety of different behaviors, cognitions, and emotions, taken together, indicate sexual motivation. Thus, to locate sources for our review, we could not simply enter a few key words into a database and get the kind of data we were seeking. Our initial strategy was to read all abstracts of all articles in the *Journal of Sex Research* from the initial (1965) volume up to the present and then all articles that offered any measures of sexual motivation. The *Archives of Sexual Behavior* received similar treatment going back to 1990. We then looked up sources cited in those articles, especially the more recent ones, that contributed data regarding sexual motivation.

Subsequently, we went to the PsycINFO database (American Psychological Association, 1967–2001) and entered key words into the “keyword,” “subject,” and “abstract” search fields. Specifically, we searched for *sex* (and its derivatives) and *drive* under keyword, subject, and abstract search fields; we searched for *sexual* and *motiv* (and its derivatives) in the subject and abstract search fields; we searched for *sexual-desire* as a keyword and *sexual* and *desire* in the subject and abstract search fields; and we searched for the letters *libid* (and its derivatives) under both the subject and abstract search fields. Our PsycINFO search yielded over 3,400 citations. A similar search in MEDLINE (National Library of Medicine, 1966–2001) yielded approximately 2,000 citations.

The guidelines that we followed for inclusion or exclusion of specific studies were as follows. We omitted from our review research on nonhumans, dissertations (however, if the dissertation was also published in a refereed journal, it was included), and case studies. We favored articles reporting normal populations, although we also report some evidence on clinical populations, especially in connection with studies of the physiological aspects of sexuality (and presenting complaints of hypoactive sexual desire). Narrowly defined subpopulations (e.g., people who are HIV positive, people with depression, paraplegics) were also screened out. Last, we also omitted many studies that focused only on one gender, although there are data (again, especially referring to the biological aspects of sexuality) that were applicable to our review.

Thoughts, Fantasies, and Spontaneous Arousal

The person with the greater sex drive would probably think about sex more often than the person with the lesser drive, just as the person with a greater motivational interest in money, children, or football will devote more spontaneous thought to that topic than a less interested person. Several studies have assessed frequency of spontaneous thoughts about sex. Eysenck

(1971) found that men reported more frequent thoughts about sex than women. Laumann, Gagnon, Michael, and Michaels (1994) found that men think about sex more often than women. Over half the men in their national sample reported thinking about sex every day, whereas only one fifth of the women reported thinking about sex that often.

Recent studies on uncontrolled and unwanted sexual thoughts underscore the conclusion that the male sex drive evokes more sexual thinking even if the person does not wish to have those thoughts. Byers, Purdon, and Clark (1998) found that male college students reported more intrusive, unwanted, and even personally unacceptable thoughts about sex than did college women (7.5 vs. 5.6 out of 20 possible sexually intrusive thoughts listed). Vanwesenbeeck, Bekker, and van Lenning (1998) developed a sexual compulsion scale with items such as “I think about sex more than I would like” and “I must fight to keep my sexual thoughts and behavior under control.” Men scored higher than women on this scale, indicating a greater sense of being sexually driven.

Data on spontaneous sexual arousal and desire reveal one way in which men seem to have a higher sex drive. Beck, Bozman, and Qualtrough (1991) found that men report more frequent sexual desire than women. Nearly all the men (91%) but only half the women (52%) experienced sexual desire several times a week or more. Their study also helped rule out the alternative explanation that women find it more difficult than men to recognize sexual desire, because men and women endorsed essentially the same indicators of desire.

Likewise, a study by Knoth, Boyd, and Singer (1988) concluded that the modal young man experiences spontaneous sexual arousal several times per day, whereas the modal young woman experiences it only a couple times per week. Eysenck (1971) likewise found that men reported more frequent sexual desire and more easily stimulated desire than women. Jones and Barlow (1990) had a sample of young heterosexual adults monitor their sexual feelings for 7 days, and the men had more than twice as many sexual urges per day as the women (4.75 vs. 2.00, respectively). The difference in internally generated fantasies was not significant, but men had significantly more sexual fantasies during masturbation than women.

It is possible that women sometimes do not know that they are sexually aroused, given the less salient nature of female arousal as compared to male arousal. It is thus conceivable that women are aroused more often than they report, and therefore the true gap between the genders could be smaller than it appears. Then again, the women in these studies were able to report that they experienced spontaneous sexual arousal sometimes, so they are not entirely inept at sensing their own responses. One might even suggest that the relative invisibility of female sexual arousal causes women

merely to guess and estimate their frequency of response, and therefore perhaps they overestimate this frequency, in which case the gender difference would be even larger than these studies found. In any case, the best current evidence suggests more frequent arousal in men than in women.

Sexual fantasies are probably one of the best indexes of strength of sex drive because they are explicitly sexual and require conscious attention but are not constrained by opportunities, social pressures, or other external factors. A person may quietly enjoy a sexual fantasy during a bus ride, a lecture, or a nap, for example. Moreover, it seems quite safe to assume that a person with a high sex drive will have more frequent sexual fantasies than a person with a low sex drive. Consistent with the view that fantasies are an index of desire, Nutter and Condon (1983) found that women suffering from chronically inhibited sexual desire reported less sexual fantasy than normal control women.

Gender differences in sexual fantasy have been examined in many studies. A review and meta-analysis by Leitenberg and Henning (1995) concluded that men have more frequent and more varied fantasies than women. That is, men's fantasies occur more often than women's, include more different partners than women's, and extend to a broader variety of sex acts than women's (on an individual rather than a population basis—probably there is at least one woman who has had any given fantasy). These differences in fantasy suggest greater sex drive in men.

The variety in sex partners was the focus of a study by Ellis and Symons (1990). They asked people whether they had had sex with over a thousand different partners in their imagination. Given the relatively young age of their sample (college students), a very active and highly motivated imagination would presumably be necessary to achieve that high a tally. They found that men were four times more likely than women to report having imagined a thousand or more sex partners.

Thus, as compared with women, men think about sex more often, report more frequent arousal, and have more frequent and variable fantasies. These findings would be most consistent with a view that men have a higher sex drive.

Desired Frequency of Sex

A rather direct index of the strength of any drive is how frequently the person feels the desire to satisfy it. Certainly one would expect that a person with a stronger sex drive would desire sex more often than a person with a relatively weak sex drive. Desired frequency of sex is therefore an important measure of sex drive.

Many findings suggest that men want sex more frequently than women. Ard (1977) reported a survey of

couples who had been married for over 20 years. He found that "husbands continued to prefer intercourse more frequently than wives" (p. 274). In fact, wives consistently reported that they were quite satisfied with the amount of sex they had in their marriages, but men on average wished for about a 50% increase. M. Brown and Auerback (1981) likewise found that a majority of husbands (60%) but only a minority of wives (32%) said they would prefer to have sex more often. A more recent study by Julien, Bouchard, Gagnon, and Pomerleau (1992) found that husbands and wives agreed that the men were more sexually active and frisky. Even more relevant, Julien et al. (1992) found that men were more likely than women to report having less sex in marriage than they wanted. With a sample of couples ages 51 to 61, Johannes and Avis (1997) found that women were more likely than men to wish for less frequent sex than they were having, whereas husbands were more likely to wish for more frequent sex than they were having. A study of elderly couples in Sweden likewise found that men wanted more frequent sex than women (Bergström-Walan & Nielsen, 1990). Indeed, the authors of that study concluded that "men are significantly more sexual than women, in all ages and in all respects" (p. 289).

Those findings refer to mature couples who are well into long-term relationships. One might expect that men and women would be more similar early in relationships. Yet data show that at the start of a relationship, men desire sex more than women. Abundant evidence confirms that men are ready for sex earlier in a relationship than women. In a large Australian sample, McCabe (1987) found that the category of people who were in a committed relationship, who wanted to have sex, but who were not having sex, consisted almost entirely of men. For example, among 25-year-olds, 28% of men but only 2% of women were in this category of "reluctant virgins." Sprecher and Regan (1996) found that men were more likely than women to cite partner unwillingness as the reason they were not having sex. Driscoll and Davis (1971) found that men were more likely than women to list as a reason for not having sex the fact that they could not talk their partner into doing so and that the decision was not theirs. Women are willing to wait longer within a dating relationship, measured either in terms of clock and calendar time or in terms of number of dates, before having sex (Buss & Schmitt, 1993; Cohen & Shotland, 1996; Sprecher, Barbee, & Schwartz, 1995). For example, Cohen and Shotland found that men expected sex after about 8 dates, whereas women expected it after about 12.

Thus, within heterosexual relationships, men want sex more than women at the start of a relationship, in the middle of it, and after many years of it. Consistent with that sweeping conclusion, McCabe (1987) found that men in relationships (across the full sample and all

levels of relationship longevity) showed significantly more desire for intercourse than they were having, whereas women had about what they wanted.

This might seem exhaustive, but Baumeister and Bratslavsky (1999) proposed that there are theoretical grounds to anticipate one possible exception. Specifically, they proposed that there may be a phase during which the relationship is blossoming in the sense that intimacy is rising rapidly and passion is high, and during that brief interval the gap between men and women may dwindle or even disappear entirely. Thus, we do think there remains the conceptual possibility that there is a brief phase in many relationships during which female sexual desire may approach the male desire in frequency and intensity. Among 20-year-olds who had been dating for about 2 years, Davies, Katz, and Jackson (1999) found no mean gender difference in self-reported sexual desire, which does suggest that there may be a phase of equal desire. Still, other evidence for that conclusion remains sparse, and the weight of evidence shows unmistakably that at most points in relationships men want more sex than women.

One reason that women may be less willing to engage in sexual intercourse is because of the possibility of becoming pregnant as a result. By biological necessity, women are much more invested in pregnancy and, thus, they may be reluctant to have sex because they recognize they will be the ones to suffer the consequences. Thus, for heterosexual couples, women's weaker desire for sex could indicate cautiousness due to the possibility of pregnancy. One way to examine this hypothesis would be to consider sexual activity that does not risk pregnancy, such as same-gender sex.

Same-sex relationships provide relevant evidence about gender differences in sex drive. People in these relationships are clearly willing to defy social pressures favoring heterosexuality, at least to the extent of forming a committed same-gender relationship, and so it is reasonable to conclude that people are not simply conforming to social prescriptions. Also, the same-gender relationships are relatively free of the direct influence of the opposite gender, and so it is possible to examine what sexual patterns look like when they are set by only one gender.

One large investigation that included a sizeable sample of same-gender relationships was the study by Blumstein and Schwartz (1983). They found that gay men had higher frequencies of sex than lesbians at all stages of relationships. Within the first 2 years of a relationship, for example, two thirds of the gay men but only one third of the lesbians were in the maximum category of having sex three or more times per week (the highest frequency category). After 10 years together, 11% of the gay men but only 1% of the lesbians were still in that category of highly frequent sex. At the other extreme, after 10 years nearly half the lesbians,

but only a third of the gay men, were having sex less than once a month. Even that difference may be a substantial underestimate of the discrepancy in sexual activity: Blumstein and Schwartz reported that the gay men who had largely ceased having sex after 10 years together were often having sex with other partners, whereas the lesbians who had ceased having sex together had generally not compensated for this deficit by finding other sexual outlets. A lack of sexual desire and activity in women is reflected in the phrase "lesbian bed death," (e.g., Iasenza, 2000) which has been coined to describe the low levels of sexual activity among lesbians in long-term relationships.

Similar conclusions emerged from an earlier study by Bell and Weinberg (1978), which did not limit its sample to people in committed relationships and is thus a useful complement to the Blumstein and Schwartz (1983) study. White homosexual men were more likely than lesbians (47% vs. 32%) to report having sex more than once per week. A similar difference was found among gay Blacks (65% vs. 56%).

Thus, evidence from multiple sources indicates that men want sex more often than women. This appears to be true in both homosexual and heterosexual relationships and at all ages and relationship stages. Table 1 summarizes the findings reviewed in this section. The pattern would tentatively suggest higher sex drive in men.

Desired Number of Sex Partners

Another possible sign of a high sex drive is desire for many different partners. All else being equal, we would expect a person with a stronger sex drive to want to have sex with more different people than someone with a weaker sex drive. This is an important complement to the previous section, which focused on how often the person desires to have sex with the same partner.

Several studies have approached this question by asking young adults how many sex partners they would ideally like to have over the rest of their lives if they were unconstrained by fear of disease, legal constraints, possessive mates, and the like.

Surely it is possible that desire for multiple partners might be a special case. One can argue that social pressures and evolutionary contingencies shaped men to be more inclined than women toward promiscuity. If the promiscuity data were to differ from the general patterns found with other measures, it might be necessary to dismiss it as a nondiagnostic exception. However, if it reflects the same pattern found with other variables, then it seems reasonable to treat it as indicative of the larger pattern. Certainly it seems reasonable on an a priori basis to predict that a woman with a high sex drive would desire more partners than a woman with a low sex drive.

Table 1. Desired Frequency of Sex

Source	Sample	Format	Overall N	Males	Females	Measure
Ard, 1977	Longitudinal study ranging from 1935–1955 following New England (U.S.) couples from their engagement. This sample consisted of 161 couples still married to one another after 20 years of marriage	Questionnaire	322 (161 couples)	M = 6.54	M = 5.02	Self-reported frequency of preferred intercourse per month
Bell & Weinberg, 1978	Gays and lesbians from the San Francisco Bay Area, CA, recruited from public advertising, personal contacts, gay and lesbian organizations, mailing lists, private bars, and public places; participants were randomly selected from recruitment pools based on race and sex	Questionnaire	979	n = 574	n = 228	Self-reported percentage of White homosexuals having sex more than once per week
Bergström-Walan & Nielsen, 1990	Swedish citizens ages 60–80 randomly selected through direct mail	Questionnaire	509	47% n = 111	32% n = 64	Self-reported percentage of Black homosexuals having sex more than once per week
Blumstein & Schwartz, 1983	Volunteers from all regions of the United States recruited through media appearances, other volunteers, advertisements, and service and religious organizations	Questionnaire	6,071 couples; 4,314 heterosexual couples, 969 gay male couples, 788 lesbian couples	65% 54%	56% 16%	Self-reported percentage indicating sexuality as “very or fairly important” at participant’s present age
				Gay male couples	Lesbian couples	
		In-depth interview	In depth interviews: 120 heterosexual couples; n = 72 married and 48 cohabitating couples; 90 lesbian couples, 90 gay male couples	n = 309	n = 357	Self-reported incidence of sex at least three times a week within the first 2 years of the relationship
				67% n = 169	33% n = 61	Self-reported incidence of sex at least three times a week after 10 years in the relationship
				11% n = 169	1% n = 61	Self-reported incidence of sex once a month or less after 10 years in the relationship
				33% n = 30	47% n = 16	Self-reported preference for more sex
M. Brown & Auerback, 1981	Well-educated, middle class couples from the San Francisco, CA area married between 2–35 years. Couples ranged from 21–63 years of age	Questionnaire	100	60%	32%	
			n = 50 males n = 50 females			
Buss & Schmitt, 1993	University students	Questionnaire	148	n = 75	n = 73	Self-reported mean likelihood to consent to sexual intercourse after specified time intervals on a scale ranging from 3 (<i>definitely yes</i>) to –3 (<i>definitely not</i>)
				(approximate M) 2	(approximate M) 2	5 years

Cohen & Shotland, 1996	Predominantly White heterosexual university students from Pennsylvania, United States, ages ranged from 17–37 years ($M = 18.4$ for women, 18.9 for men)	Questionnaire	242	<p>2.25 2.25 2 1.5 1 .25 -.5 -1 -1.5 $n = 46$</p> <p>1.5 1.25 0 -.5 -1.5 -2.5 -2.75 -2.75 -3 $n = 41$</p> <p>Self-reported number of dates after which participant expects sexual intercourse to occur</p>	<p>2 years^a 1 year^a 6 months^a 3 months^a 1 month^a 1 week^a 1 day^a 1 evening^a 1 hour^a</p>
Driscoll & Davis, 1971	University students between the ages of 19–20	Questionnaire	584	<p>$M = 10.11$ $SD = 6.37$ $n = 48$</p> <p>$M = 6.54$ $SD = 5.72$ $n = 185$</p>	<p>$M = 17.73$ $SD = 11.91$ $n = 46$</p> <p>$M = 13.09$ $SD = 8.89$ $n = 288$</p> <p>Self-reported number of weeks in dating after which participant expects sexual intercourse to occur</p>
Julien, Bonchard, Gagnon, & Pomerleau, 1992	Suburban and middle class couples from Montreal, Canada, married at least 5 years with at least one child older than 1 year, average length of marriage, $M = 12.4$ years ($SD = 4.8$); ages ranged from 30–45 years; Males, $M = 37.2$ ($SD = 4.9$); Females, $M = 35.7$ ($SD = 4.8$)	Questionnaire and personal interview	144	<p>$n = 39$ $n = 27$</p> <p>$n = 261$ males $n = 323$ females</p>	<p>$n = 1$ $n = 12$</p> <p>Self-reported personal reasons endorsed for not having sexual intercourse: “Couldn’t talk into,” $z = 8.00, p < .01$ “Decision not mine,” $z = 3.87, p < .01$ Responses based on the couple’s 10 most recent sexual interactions:</p>
McCabe, 1987	Upper, middle, and lower class participants from urban and rural Australia sampled from youth institutions such as sporting, craft, and debating groups, unemployed youths, trained nurses, high school students, and university students, ranging in age from 16–25 years	Questionnaire	1,637	<p>$n = 72$ males $n = 72$ females</p>	<p>Husbands and wives agreed that men more sexually active Men more likely than wives to report discrepancy in desired vs. actual sex Self-reported “reluctant virgins” in committed relationships</p>
Sprecher, Barbee, & Schwartz, 1995	Predominantly White, heterosexual university students from the Midwestern United States, ages ranged from 17–22 years	Questionnaire	1,659	<p>$n = 833$ males $n = 804$ females</p>	<p>Self-reported percentage of participants who had known their partner of first sexual intercourse for less than 1 month</p>
Sprecher & Regan, 1996	Nonprobability sample of Midwestern (U.S.) university students identifying as heterosexual virgins (self-reported that they had never had sexual intercourse or penile–vaginal sexual intercourse)	Questionnaire	289	<p>$n = 255.2$ 40% $M = 2.24^b$</p> <p>$n = 193.99$ 19% $M = 1.65^{bc}$</p>	<p>Self-reports of participant’s virginity attributed to partner’s unwillingness to have sex</p>

^aAt each time period less than 5 years, men and women differ significantly, $p < .001$. ^bMeans represent attributes of virginity; the mean importance of the reason on a scale from 1 (not at all important) to 4 (very important) on the question, “My current (or last) partner is (was) not willing.” ^c $t = 3.88, p < .004$.

Buss and Schmitt (1993) reported from several studies that men desired significantly more sex partners than women did. In reporting how many sex partners men and women would like to have over the next 2 years of their lives, for example, the men were on average hoping to have about 8 partners, whereas the women wanted approximately 1. Over the course of a lifetime, men wanted around 18, whereas women desired 4 or 5. Miller and Fishkin (1997) asked a sample of college students how many sex partners they would like to have over the entire rest of their lives if they were not constrained by any factors such as disease or laws. The mean response by the women was that they would ideally like to have 2.7 sex partners, whereas the men's mean response was 6.4. Miller and Fishkin did not delete outliers from their sample, and in fact they noted that the difference in means was almost entirely due to the skew: The median was 1 partner for both genders. Thus, large numbers of young men and women aspire to having only 1 sex partner across a lifetime, but there is a minority of promiscuously inclined men that is much larger than the minority of promiscuously inclined women.

One may reject these studies as being merely hypothetical and insist on actual behavior. The same conclusion emerges: Men actually report significantly more sex partners than women, across all studies (e.g., Janus & Janus, 1993; Laumann et al., 1994). Unfortunately this difference suffers from being logically impossible, insofar as heterosexual intercourse involves one man and one woman (so the mean tallies of partners should be equal). Several studies have sought to explain this recurrent finding, and the answers converge on motivated cognition: Some men, but fewer women, tend to rely on estimating the number of sex partners and hence round up, whereas women are more likely to rely on trying to enumerate all prior partners, which tends to lead to occasionally forgetting some partners and hence to producing an undercount (N. R. Brown & Sinclair, 1999; Wiederman, 1997).

We note too that median differences are plausible, unlike mean differences. A few highly promiscuous women can have sex with many men. The median differences (e.g., Laumann et al., 1994) fit the view that the promiscuously inclined minority of men is larger than the promiscuously inclined minority of women.

In our view, the difference in the way people count sex partners is itself an indication that men want more than women. Men prefer an estimation strategy because it tends to yield a high tally; women prefer an enumeration strategy because it yields a low tally. Choosing strategies in that way enables men to come up with higher numbers than women, even though the means should be the same.

If our interpretation of motivated cognitive strategies is correct, it should be reflected in how people count marginal cases. Sanders and Reinisch (1999) provided relevant data on this. They asked a sample of

students "Would you say you had sex if ..." and then presented a list of possible activities. Men and women agreed very closely that vaginal and anal intercourse constituted sex and that kissing did not, but they disagreed on the intermediate activities such as fellatio, cunnilingus, and manual stimulation of a partner's genitals. Men were consistently more likely to rate those activities as sex than women. This fits the view that men desired to count those activities as having had sex, which would serve the goal of enabling them to think they had a higher number of sex partners.

Desire for multiple partners can lead to extramarital or extradyadic activity. Most studies of extramarital activity find that men report more partners than women, in both heterosexual and homosexual relationships (Cotton, 1975; Lawson, 1988; Spanier & Margolis, 1983; Thompson, 1983). For example, Spanier and Margolis found that 26% of the unfaithful husbands had had more than three extramarital partners, as compared to only 5% of the unfaithful wives. Conversely, wives outnumbered husbands in the category of having only one extramarital partner (64% vs. 43%). The same conclusion emerges from studies of lesser infidelities, such as necking or petting with someone other than a steady dating partner: Men do this more than women (Hansen, 1987).

Another consequence of a desire for multiple partners would be engaging in sex with someone whom one has just met. Herold and Mewhinney (1993) surveyed singles bar patrons, who presumably are already selected for interest in meeting new sex partners, but even in that selected population they found that men were more likely than women to have had sex with someone they had met that same day. For example, when asked whether they had ever engaged in any sexual activity beyond hugging and kissing with a person who they had met the same day, 80% of men but only 59% of women said "yes." When asked about sexual intercourse with someone they had met that same day, 72% of the men as opposed to 49% of the women said "yes." The men were also significantly more likely to express a desire and expectation to do so again. A quarter (25%) of the men but only 2% of the women said they always enjoyed casual sex.

Similar findings are reported by Laumann et al. (1994, p. 239), with a rigorous sample and thorough data, although the numbers overall are much lower than what was found with patrons of singles bars. Laumann et al. found that men were more likely than women to report having sex with someone they had just recently met. They suggested that these discrepancies resemble the gender difference in number of sex partners and represent reporting biases caused by a double standard. It is, however, logically possible that more men than women have had sex with someone they just met, because a few women might do this with

many different men. Still, the relevant conclusion is that men are more willing than women to have sex with a new acquaintance.

Converging evidence of desire for multiple partners may be obtained by examining homosexual activity, because those patterns are set by only one gender. Again, the evidence consistently finds that men desire more partners than women. The subculture of gay men did briefly establish bathhouses and other institutions that allowed men to have sex with half a dozen or more partners in a single evening. Even though lesbians are better able than gay men to engage in such promiscuity (because of the lack of refractory period), lesbian communities do not seem to have created any market for such institutionalized orgiastic behavior.

Converging evidence comes from studies of extradyadic sex partners. The data from Blumstein and Schwartz (1983) are probably most relevant, because they were collected after the sexual revolution had removed most traditional barriers to such activity, and AIDS and other dangers had not yet surfaced to create new barriers. Like Lawson (1988), they found that husbands were more likely than wives to have a high number of partners outside their primary relationship—even after controlling for the greater incidence of male than female infidelity. In other words, men were both more likely than women to stray at all, and straying men were more likely than straying women to have multiple partners.

Evidence about infidelity in same-gender relationships is even more dramatic. Blumstein and Schwartz (1983) found that, among people in committed relationships, gay men were far more likely than lesbians to have sex with someone other than their regular partner (82% vs. 28%). Among those who did experience sex with someone other than the partner, lesbians tended to have only 1 outside partner (53%), unlike gay men (7%). The proportion of gay men who reported having had over 20 outside partners during the relationship was substantial (43%), but among lesbians it was negligible (1%). Even in the moderately promiscuous category of having had between 6 and 20 partners, gay men outnumbered lesbians (30% vs. 4%).

Again we look to Bell and Weinberg (1978) for converging evidence with a sample that was not restricted to people in committed relationships. In a sample of several hundred respondents, far more gay White men (43%) than White lesbians (0%) reported having had over 500 sex partners. Meanwhile, 58% of White lesbians, but only 3% of gay White men, said their lifetime homosexual experience had included 9 or fewer partners. (The difference among Black respondents was smaller.) Thus, again, men predominate at the high levels of sexual activity, whereas women predominate at the low levels.

Again, these data point toward the conclusion of greater sex drive in men. Men do appear much more motivated to

have a high number of sex partners than women. Table 2 summarizes the findings reviewed in this section.

Masturbation

Differential masturbation is a rather clear and unambiguous prediction that follows from any hypothesis about differential sex drive. Masturbation involves gratification of one's sexual desires in a way that is only minimally encumbered by opportunity constraints, social pressures, and broader concerns. A person with a higher sex drive will probably masturbate more than a person with a lower sex drive.

Gender differences in masturbation are large and consistent. Women and girls are less likely to masturbate than men and boys (Arafat & Cotton, 1974; Asayama, 1975; Laumann et al., 1994; Sigusch & Schmidt, 1973), and some evidence indicates that males who masturbate do it more frequently than females (Laumann et al., 1994; Sigusch & Schmidt, 1973). Jones and Barlow (1990) found, for example, that 45% of men but only 15% of women reported masturbating at least once per week. Meanwhile, nearly half the women in their sample (47%) but only 16% of the men said they had never masturbated. Arafat and Cotton (1974) found women and girls were almost four times more likely than men and boys to say they never masturbated (39% vs. 11%). In a survey of German teenagers ages 16 to 17, Sigusch and Schmidt (1973) found that 80% of the boys, but only 25% of the girls, were engaged in masturbation during the past year, and boys averaged five times per month as opposed to once per month for the girls.

Indeed, in a meta-analysis of gender differences in sexual behavior, Oliver and Hyde (1993) found that masturbation was the largest difference of all the variables they examined, with men nearly a full standard deviation higher than women, averaged across 26 different findings. Even past the age of 60, men masturbate more than women (Bergström-Walan & Nielsen, 1990). The differences are found in both incidence and frequency. In other words, women are more likely than men to report never masturbating at all, and women who do masturbate do so less frequently than men who masturbate (Laumann et al., 1994).

Is it safe to infer level of sex drive from rates of masturbation? Some have proposed that society disproportionately discourages girls from masturbating, so that the gender difference in masturbation may reflect socialization. For example, they claim that society does not teach girls to masturbate or approve of their doing so. We find these arguments dubious. Society has certainly expressed strong and consistent disapproval of masturbation by boys, and if anything the pressures have been more severe on boys than girls.

Table 2. *Desired Number of Sex Partners*

Source	Sample	Format	Overall N	Males	Females	Measure
Bell & Weinberg, 1978	Gay and lesbians from the San Francisco Bay Area, CA, recruited from public advertising, personal contacts, gay and lesbian organizations, mailing lists, private bars, and public places; participants were randomly selected from recruitment pools based on race and sex	Questionnaire	979	n = 572 White n = 110 Black 43% White 33% Black 3% White 6% Black 28% White 32% Black n = 3,591	n = 228 White n = 64 Black 0% White 0% Black 58% White 54% Black 0% White 2% Black n = 3,606	Self-reported number of sex partners More than 500 partners ever Fewer than 9 partners ever 51 or more partners in the past year Self-reported incidence of nonmonogamy among married heterosexuals
Blumstein & Schwartz, 1983	Volunteers from all regions of the United States recruited through media appearances, other volunteers, advertisements, and service and religious organizations	Questionnaire	Questionnaires: 6,071 couples n = 4,314 heterosexual couples, 969 gay male couples, 788 lesbian couples	26%	21%	
		In-depth interview	In depth interviews: 120 heterosexual couples (n = 72 married and 48 cohabitating couples), 90 lesbian couples, 90 gay male couples	n = 913 7% 29%	n = 750 3% 43%	Self-reported incidence of having more than 20 extramarital partners among married heterosexuals Self-reported incidence of having sex with only one extramarital partner among married heterosexuals Self-report of any instance of nonmonogamy in heterosexual couples after 10 years of marriage Self-reported incidence of nonmonogamy among gay and lesbian couples Self-reported incidence of having only one extramarital partner among gays and lesbians Self-reported incidence of having between 6–20 partners among gays and lesbians Self-reported incidence of having over 20 partners among gays and lesbians Self-reported desired partners in the next 2 years
Buss & Schmitt, 1993	University students	Questionnaire	148	n = 1,741 30% n = 1,914 82% n = 1,539 7% 30% 43%	n = 1,751 22% n = 1,554 28% n = 368 53% 4% 1%	
				n = 75 M = 8	n = 73 M = 1 ^a	

Author(s), Year	Sample Description	Method	n	M = 4-5 ^a	Self-reported desired partners over the course of a lifetime
Cotton, 1975	White female lesbians located in New York City	Personal interview	30	M = 4-5 ^a n = 30	
Hansen, 1987	University students who had been in a committed dating relationship, mean age 20.8, mostly White and never married	Southern U.S.	215	Average 1-2 n = 119	Number of previous lovers Self-reported engaging in sexual activity outside of a committed dating relationship, including: —Erotic kissing —Petting —Intercourse p < .05
Herold & Mewhinney, 1993	Singles bars patrons sampled from 10 different bars in South Ontario, Canada; mean age 23 for both males and females; no gender differences for relationship status (95% single) or level of education	Questionnaire	169	n = 86	Self-reported experiences of
Janus & Janus, 1993	Cross-sectional national survey of a sample of individuals over the age of 18, dispersed throughout 48 states, and sufficiently representing the characteristics of the national population of the United States	Questionnaire and in-depth interview	2,765	n = 1,391	Casual hand-genital sex Casual oral-genital sex Casual sexual intercourse Casual sex in the past year Anticipation of casual sex Self-reported number of different individuals (including spouses) with whom participant has had sexual relations
Laumann, Gagnon, Michael, & Michaels, 1994	National Health and Social Life Survey data from a U.S. area probability national sample ^b	Questionnaire and personal interview	n = 1,347 males n = 1,418 females Out of 4,550 questionnaires distributed, 2,765 satisfactorily completed questionnaires (no more than 8 omitted questions)	3%	none
			28% 32% 21% 8% 10%	42% 39% 9% 3% 4%	1-10 11-30 31-60 61-100 101+
			n = 1,407 9.9% 66.7% 18.3% 5.1% n = 1,330 7.1%	n = 1,748 13.6% 74.7% 10.0% 1.7% n = 1,669 8.7%	Self-reported percentage distributions of number of partners In the last 12 months 0 1 2-4 5+ In the past 5 years 0

(Continued)

Table 2. (Continued)

Source	Sample	Format	Overall N	Males	Females	Measure
Lawson, 1988	British sample of individuals currently in the divorce process	Questionnaire, in-depth interview, and small group discussion	579 questionnaires	45.7% 27.7% 12.0% 4.2% 3.3% <i>n</i> = 1,394 3.4% 19.5% 20.9% 23.3% 16.3% 16.6% <i>n</i> = 1,394 <i>Mdn</i> = 6 <i>n</i> = 225	59.4% 24.3% 5.9% 1.4% .4% <i>n</i> = 1,732 2.5% 31.5% 36.4% 20.4% 6.0% 3.2% <i>n</i> = 1,732 <i>Mdn</i> = 2 <i>n</i> = 331	1 2-4 5-10 11-20 21+ Since age 18 0 1 2-4 5-10 11-20 21+ Self-reported number of sex partners since age 18 Percentage of self-reported adulterous liaisons
Spanier & Margolis, 1983	Separated and divorced persons living in rural Pennsylvania; length of marriage ranged from 4 months to 45 years (<i>M</i> = 9); ages of participants ranged from 20-67 years (<i>M</i> = 33)	Questionnaire	205	40% 15% 33% 40% <i>n</i> = 91	60% 25% 50% 25% <i>n</i> = 114	Just 1 liaison 1-3 liaisons At least 4 liaisons Self-reported extramarital sexual activity
			<i>n</i> = 50 separated <i>n</i> = 155 divorced	38.5% <i>n</i> = 35 42.9% 22.9% 8.6% 25.7%	37.8% <i>n</i> = 42 64.3% 26.2% 4.8% 4.8%	Self-reported number of extramarital sexual partners 1 partner 2 partners 3 partners More than 3 partners

^aMen wanted more partners at every time interval; *p* < .001 for each interval, range = .49 to .97, *M* = .63. ^bA probability national sample is one that adequately represents the demographics of the population as a whole.

For example, the warnings about blindness and insanity (as putative consequences of masturbation) were mainly directed at young males, not females.

As to the feminist suggestion that society fails to teach girls to masturbate, literally that may be true, but we do not think that society teaches boys to masturbate either. Arafat and Cotton (1974) found that half the girls and more than half the boys (who masturbated) said they discovered it themselves. An equal number of boys and girls learned about masturbation from friends (30.9% of boys, 29.3% of girls) and siblings (2.6% of boys, 3.9% of girls). The high rates of self-taught masturbation suggest that it is not a technically recondite, esoteric practice. Anyone who wants to masturbate can probably figure out how to do it.

Moreover, the view that society uses guilt to prevent girls from masturbating is questionable. Although guilt is reported by a significant minority of both male and female masturbators (see also Laumann et al., 1994), it does not appear to be a very effective deterrent. Undoubtedly the greatest guilt would presumably be experienced by Catholic priests and nuns, for whom masturbation is a violation of their most sacred vows of chastity. Yet apparently most priests do engage in masturbation (e.g., Sipe, 1995, reported extensive interviews with many priests; Murphy, 1992, reported similar conclusions from survey data). If the guilt is not enough to deter priests, it is probably not a major barrier for other people.

The only other possible objection in terms of guilt would be that men and women have an equal desire to masturbate but guilt weighs more heavily on women than men. This is directly contradicted, however, by Arafat and Cotton's (1974) finding that more males (13%) than females (10%) reported feeling guilty after masturbation. By the same token, more males than females said they regarded their masturbatory activities as perverse (5% vs. 1%). Thus, if anything, guilt weighs more heavily on men.

If not guilt, then what is the major deterrent to masturbation? According to Arafat and Cotton's (1974) data, the most common reason for not masturbating was a lack of desire, and that was reported by more of the nonmasturbating females (76%) than the nonmasturbating males (56%). Apparently it is not lack of social encouragement, but lack of personal interest that explains the lesser incidence of masturbation among females. The lack of personal interest points to an explanation in terms of differences in sex drive.

The view that masturbation is directly linked to strength of sex drive is supported by further evidence. Within either gender, masturbation is related to strength of sex drive and interest in sex, so that men with higher sex drives masturbate more than men with weaker ones, and the same holds true for women (Abramson, 1973). It is therefore most plausible and parsimonious to infer

that the differences between genders have the same basis as the differences within gender.

The data on masturbation thus appear to be clear and consistent, and the gender difference is large. Men masturbate more frequently than women, and the reasons appear to be linked to desire for sexual gratification. Hence women's lesser masturbation points toward the conclusion that they have a milder sex drive.

Willingness to Forego Sex

Another straightforward prediction is that the person with the stronger drive will be more reluctant to do without. Deprivation of whatever one desires will be more painful for the person with the stronger desires, almost by definition. With regard to sex, this means that a relatively mild sex drive should render a person more willing than others to do without sex.

The Kinsey studies (Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin, & Gebhard, 1953) noted a relevant gender difference. They obtained relatively thorough sexual histories from a broad sample of individuals. One of their major concepts was "total sexual outlet," which referred to all sexual activity (often operationalized as total number of orgasms) in the person's life, from all sources. They found that some women showed substantial fluctuations in total outlet. Thus, a woman might enjoy a full and active sex life for a period, then lose her partner and have no sexual activity at all for some time, and then resume active sex with a new partner. Kinsey et al. (1953) observed that such discontinuities were almost never found among men. More recently, Leiblum and Rosen (1988) confirmed that in-depth histories indicated that many women seem to adapt easily to a complete absence of sexual activity during long periods of involuntary abstinence, unlike men.

The total outlet measure is quite relevant to the issue of total sex drive, because it combines all behavior relevant to the sexual motivation and avoids the potential confusion that could stem from substituting one kind of sexual gratification for another. The fact that women were more willing than men to do without sexual activity altogether supports the view that women are less strongly motivated to find some sexual gratification consistently across time. When men lose one source of sexual gratification, such as by breaking up with a regular sex partner, they apparently seek out a new one soon, or at least they step up the frequency of masturbation.

There are other signs that women are more willing than men to go without sexual gratification. As already reported, women are slower to want sex within relationships, and they take longer after puberty to commence masturbation and other sexual activity. Moreover, the masturbation discrepancy is quite rele-

vant because it avoids the alternative explanation that women are willing to forego intercourse out of fear of pregnancy rather than lack of desire: Masturbation carries no risks of calamity (indeed, warnings of dire consequences of masturbation have been more frequently aimed at boys than girls), and the main reason reported by women and girls for not masturbating is a lack of desire (Arafat & Cotton, 1974).

Reasons for not having sex were the explicit focus of a study by Leigh (1989). Among men, fear of rejection was the main reason given for avoiding sex. Women, however, reported that they avoided sex because a lack of interest and enjoyment. The significantly greater allusion by women than men to a lack of sexual interest and enjoyment fits the view that women have a weaker sex drive, as Leigh (1989) herself acknowledged.

Another very instructive case concerns clerical vows of celibacy. This is especially important because there is no question of separate values or double standard: Among Catholic Christian clergy, both men and women take profoundly important and sacred vows to forego all sexual gratification throughout life. The single standard of absolute purity is thus clear to both priests and nuns. Yet the evidence suggests that nuns are far more successful than priests at achieving that ideal.

Clerical celibacy among both genders was studied by Murphy (1992) using a questionnaire survey and a sample of several hundred. Her results suggest significantly greater success at celibacy among female than male Catholic clergy. More male clergy (62%) than female clergy (49%) reported having been sexually active since they took their vows of celibacy. Among the sexually active, the men had had more partners than the women. Thus, 24% of the sexually active men, but hardly any of the sexually active women (3%) reported having had more than five partners since taking their vows. The men were more likely than the women to emphasize the orgasm as the most important part of the experience (20% vs. 2%). The women were more likely than the men to have terminated the sexual relationship (i.e., the women might just lapse once or briefly whereas many men would continue violating their vows). All these findings suggest that women find it easier than men to live without sexual gratification.

Emergence of Sexual Desire

If all else were equal, one would expect the person with the higher sex drive to begin sexual activity earlier than the person with the lesser drive. Unfortunately for the purposes of comparison, all else is not equal, and there appear to be significant gender differences in sexual readiness: Girls pass through puberty and achieve sexual maturity earlier than boys. Hence, if girls commenced all sexual activities earlier than boys, this could

be attributed to the earlier maturation, and it would be necessary to examine the time lag between puberty and onset of sexual behavior before drawing conclusions.

As it happens, though, most evidence indicates that boys commence sexual interest and activity earlier than girls. Women start having sex at a later age than men (Asayama, 1975; Laumann et al., 1994; Lewis, 1973; Wilson, 1975). For example, Asayama's interviews with Japanese students during the late 1940s and 1950s found that half the boys had become quite interested in sex by age 15 and 90% had by age 19, whereas only 30% to 40% of the girls had become interested by age 18. Over a third of the boys had masturbated by age 15 and over 80% had done so by age 21, whereas by age 21 only 12% of the women had masturbated. Asayama concluded that the development of sexual interest "among females is rather slow while for males it is quite rapid" (p. 95). With an American sample, Lewis (1973) found that half (52%) the boys but only 16% of the girls reported having sex by the age of 17.

Even though girls pass through puberty earlier than boys, they report experiencing sexual arousal later, and in fact in multiple samples all the boys reported their first experiences of arousal prior to the age of 13, whereas most girls reported their first experience after that age (Knoth et al., 1988). Girls start having sexual fantasies later than boys (Leitenberg & Henning, 1995), and they are slower even to develop interest in sex (Asayama, 1975). Most studies find that boys begin masturbating earlier than girls (Kinsey et al., 1953), although recent data suggest that the discrepancy may be dwindling (Leitenberg, Detzer, & Srebnik, 1993; Smith, Rosenthal, & Reichler, 1996). In a national survey, girls reported a later onset of sexual activity than boys (Leigh, Morrison, Trocki, & Temple, 1994).

A survey of nearly 2,000 seventh- and eighth-grade students found that the girls were less likely to have had sex than the boys, and in fact the boys reported about twice as many sexual experiences as the girls (De Gaston, Weed, & Jensen, 1996). The girls were also more likely than the boys to believe that sexual urges can be controlled, which suggests that the subjective intensity of desire was greater among the boys.

Thus, the gender difference in onset of sexual interest and activity suggests greater sexual interest on the part of boys. The earlier sexual maturation of girls is consistent with the general pattern of greater sexual capacity among girls. These differences underscore the need to maintain a careful conceptual distinction between sex drive and sexual capacity. Taken together, they point all the more strongly to the conclusion of greater sex drive in males. Thus, sexual interest appears very soon after puberty for males, whereas sexual interest is relatively slow to awaken in females.

It must be acknowledged that emergence of sexual desire could be affected by a variety of factors. Be-

cause an erect penis is more obvious than a lubricated vagina, males may find it easier to recognize their own sexual arousal, and this could contribute to earlier commencement of sexual activity. Hence, we do not regard the findings on emergence of sexual desire to be strong or conclusive, although they do provide some convergence with other patterns.

Seeking Versus Avoiding, Initiating Versus Refusing

Spontaneous initiation of goal-directed behavior is widely accepted as an indication of the strength of any motivation. Therefore, all else being equal, one would predict that a person with a stronger sex drive would initiate more sexual activity than a person with a weaker sex drive. To be sure, differences in initiative are not unambiguous, but there is some justification for interpreting them as indications of motivation. Hurlbert (1991) found that women with higher levels of sexual desire were more likely to initiate sex, and indeed sexual assertiveness was correlated with a number of measures indicating high sex drive. For this reason the prediction that stronger motivation would lead to more initiative is hard to dismiss, and it is therefore worth examining the evidence. If nothing else, a lack of differential initiative would speak against a hypothesis of differential drive.

Women initiate sex less often than men. A diary study by O'Sullivan and Byers (1992) found that men initiated sex about twice as often as women, although there was no significant difference in considering initiating sex. M. Brown and Auerback (1981) found that men initiated it three times as often as women during the 1st year of marriage, although the difference dwindled in later years. Byers and Heinlein (1989) found that over a 1-week period, men initiated sex about twice as often as women. Differences in sexual initiative may help explain the differential rates of sex in gay male versus lesbian relationships (Blumstein & Schwartz, 1983).

Refusal rates and patterns do not show a consistent gender difference, and some studies have concluded that men and women refuse about equally (see Blumstein & Schwartz, 1983). When a difference does emerge, however, it indicates that women are more likely to refuse. M. Brown and Auerback (1981) found that wives refused sex more often than husbands, and indeed seven times as many husbands as wives were able to claim that they had never turned down their spouse's request for sex. Thus it appears that there is some inconsistency as to whether there is any difference in refusal rates once a couple has begun having sex. (As already noted, however, many relationships do pass through a phase in which the man desires sex whereas the woman refuses; McCabe, 1987.)

Refusal rates outside of relationships do differ by gender. Probably the best data were provided by Clark and Hatfield (1989), who used an experimental procedure to investigate responses to sexual offers. Both men and women were approached by a moderately attractive, opposite-sex confederate and invited to have sexual intercourse that evening. Women's refusal rate was 100% across two studies, whereas only 25% of the men refused.

A different approach was taken by LaPlante, McCormick, and Brannigan (1980). They developed a list of 19 strategies for obtaining or avoiding sex, and then they surveyed respondents of both genders as to whether each strategy was more typical of men or women. Both genders said all 10 of the strategies for obtaining sex were more typical of men than women. Conversely, both genders said that all 9 strategies for avoiding sex were more typical of women than men. Clearly, these participants recognized initiating sex as typical of men and refusing sex as typical of women.

These differences may be questioned on the basis of social prescriptions. It might be argued that society has assigned men the role of initiating sex and women the role of refusing it. That argument raises a substantial chicken-and-egg problem: Did society originally prescribe initiative to men for arbitrary reasons, or did the greater male initiative cause society to incorporate sexual initiative into the male role? Our own suspicion is that the causal arrow points both ways, so that cultural influence tends to reify and intensify the preexisting differences.

Liking for Various Sexual Practices

A person with a higher sex drive would presumably be drawn to engage in a broader variety of sexual practices than a person with a weaker drive, although one could certainly imagine cases in which individuals have very intense but narrowly focused sex drives. Thus, the number of sexual practices that people find appealing can be used as another potential source of converging evidence.

Fewer sexual practices appeal to women than men. Laumann et al. (1994) offered their respondents a list of 14 sexual practices and asked whether they found each of them appealing. They reported only percentages, not significance tests, but these were extremely consistent: On 13 of the 14 practices, a higher percentage of men than women rated the activity as appealing, and the 14th showed no difference ("being forced by a sex partner" was rated as appealing by less than 1% of both men and women). The index summarizing the number of appealing practices yielded, not surprisingly, an overall significant finding that men liked more activities than women.

Although the list used by Laumann et al. (1994) contained practices that are favored by people in the

so-called normal range of sexual activity, such as watching a partner undress, receiving oral sex, or stimulating the anus with a finger, a similar conclusion emerges from examination of unusual or deviant variations of sexuality. Nearly all the paraphilias appeal to men more than women (American Psychiatric Association, 1994).

Even though a majority of married couples today practice both fellatio and cunnilingus, women find these activities (especially fellatio) less appealing than men. For example, Laumann et al. (1994) found that 45% of men but only 29% of women said receiving oral sex was very appealing, and a similar discrepancy was found for giving oral sex (34% of men, 17% of women). This difference caused the researchers to speculate that some women perform such acts more out of a sense of obligation than genuine desire (Laumann et al., 1994, p. 157).

The greater appeal of multiple practices to men than women is not confined to the modern United States. A study of elderly people in Sweden, which is supposedly a very egalitarian and sexually liberated culture, found that men liked the full span of sexual activities more than women (Bergström-Walan & Nielsen, 1990).

Sacrificing Resources to Get Sex

Another test of sex drive is what the person is willing to sacrifice to gain sexual gratification. As with any motivation, people with a higher drive should be willing to make more material and pragmatic sacrifices than people with a low or weak drive. With gender differences, one must keep in mind that men have generally had more money and other resources than women, so men are capable of expending more. Still, the gap has narrowed substantially in recent years, and certainly the cost of some sexual products is not large enough to make them unattainable for most people.

In any case, it is clear that men spend a great deal more money on sexual products than women. Men have paid women for sex throughout most of history and across many different cultures, but the pattern of women paying men for sex has been considerably less common and in many contexts nonexistent (e.g., Elias, Bullough, Elias, & Brewer, 1998). Even in societies where there have certainly been enough rich women to be able to pay for sex, the practice has been rare or nonexistent.

The same is true for pornography. Men spend considerably more money on pornography and erotica than women do, as all studies have shown (e.g., Laumann et al., 1994). To be sure, pornography is only one kind of sexual stimulus. A lack of interest in pornography does not alone signify a lack of interest in sex. Women's magazines in recent years do offer information about sex, presumably reflecting a marketplace in which women will pay for such information.

Some might object that most pornography is more geared toward men than women. There are two reasons to dismiss this objection, however. First, several studies have found that women do have strong physiological responses to pornography and experience levels of sexual arousal that compare with men's (e.g., Fisher & Byrne, 1978; also Heiman, 1977). It is thus clear that currently available pornography is amply arousing to women. Once they see it, they like it and find it stimulating—but women are simply not sufficiently motivated to seek out that kind of stimulation as often as men.

The other reason to dismiss the argument of gender bias in the sex industry is that if the market existed for a special, female-targeted pornography, it is highly likely that someone would have been willing and eager to make the millions of dollars that it would represent. In actual fact, the sex industry has tried repeatedly to reach out to women, but it has repeatedly failed (Abramson & Pinkerton, 1995). *Playgirl* was introduced to the market with considerable hoopla in the 1970s, but the appeal of seeing nude men did not sustain enough sales to make it successful (let alone even approaching the success of *Playboy*), and so it shifted away from male nudity as a major selling point. *Viva*, which alone among the female-targeted magazines featured pictures of male genitals, closed down after 3 years. The market was simply not there—unlike the male market for pictures of nude women, which has sustained an assortment of magazines for decades.

Another instructive category is the purchase of sexual aids and devices: There too one expends money to obtain sexual pleasure. Both men and women find such purchases embarrassing, but men are more willing to swallow their pride and make such a purchase (Laumann et al., 1994). This is true even though what is available for women (vibrators) seems superior to anything available to men (see C. M. Davis, Blank, Lin, & Bonillas, 1996). The vibrator is thus a further counterargument to the view that the sex industry is only aimed at men.

Extramarital sex constitutes a risk factor for divorce (e.g., Blumstein & Schwartz, 1983), and it seems reasonable to assume that most adulterers recognize that they are putting their marriage at risk. As already noted, research has consistently found that men are more willing than women to have extramarital sex, which suggests that they are more willing to risk their marriage. In fact, the difference may be even larger than it appears, because there is some evidence that women only have extramarital affairs when they are dissatisfied with their marriage (e.g., Lawson, 1988)—in which case they are not risking something they value as highly. The most relevant measure is whether people will put a happy, solid marriage at risk to have extramarital sex, and men seem far more willing to do that.

One could examine the expenditure of other resources for the sake of sex. We do not know of system-

atic studies, but we predict that the same conclusion would emerge. Jeopardizing one's career for the sake of a sexual indulgence would be one relevant measure. To our knowledge, female politicians and leaders have not had their careers endangered by sex scandals almost at all, whereas such scandals have damaged and even ended careers by male politicians. It is conceivable that an anti-male bias in the media leads to greater exposure of men than women, but we think that the American press is sufficiently free and competitive that it would be eager to publicize sexual misdeeds by eminent, powerful women if it could find evidence of them.

Surely the relative shortage of female leaders and politicians creates a serious base-rate confound, and so the greater number of male-centered scandals could be an artifact of the greater number of male leaders. As women increasingly move into political leadership roles, time will tell whether they are as willing as men to jeopardize their careers for the sake of short-term sexual gratifications. Given the weight of other evidence reviewed here, we predict that they will not, on average.

Favorable Attitudes Toward Sex

Attitudes and motivations are generally understood to be linked. Thus, having a motivated interest in some outcome generally produces more favorable attitudes toward it, as well as strengthening the attitude-behavior link (Crano, 1995; Sivacek & Crano, 1982). The link should be especially strong with regard to sex, in which attitudes range from the restrictive and disapproving ones that oppose many forms of sexual activity to the opposite of highly permissive, liberal attitudes that permit and even encourage sexual activity. The person with the higher sex drive would be motivated to espouse more favorable attitudes toward sex.

Findings are consistent across a broad range of sexual attitudes: Women have less permissive attitudes toward sex than men. Although they are equal on some things, generally women are more critical of promiscuity, premarital sex, extramarital sex, and various other sexual activities (Laumann et al., 1994; Oliver & Hyde, 1993; Sprecher, 1989; Wilson, 1975). Some of these attitudes, most notably favoring casual sex, produce gender differences that meet the statistical criteria to be called large differences (Oliver & Hyde, 1993). Casual sex is conceptually important because it represents the opportunity to obtain sexual gratification without a high degree of effort, commitment, or investment, and therefore people with a high desire for sexual gratification would be expected to be most favorable toward such opportunities. Apparently, most of those people are men.

The main exception to the greater permissiveness of males is in attitudes toward homosexuality. Some stud-

ies find that males are more opposed to homosexuality than females, although a meta-analysis (Oliver & Hyde, 1993) concluded that no systematic difference existed. Some findings of lesser male tolerance may have been driven partly by the fact that the term *homosexuality* connotes male homosexuality to many people. Whitley (1988) found that both men and women were more permissive toward homosexuality of the other gender but more opposed to their own gender's homosexuality (see also Herek & Capitanio, 1999). Of course, these data mainly reflect the attitudes of heterosexuals, because gay men and lesbians are certainly much more favorable and permissive in their attitudes toward same-sex activity. That discrepancy, however, makes attitudes toward homosexuality seem irrelevant to the question of differences in sex drive: There is no motivational reason to have a favorable attitude toward an activity that falls outside one's own sexual interests. In other words, men's opposition to male homosexuality is not inconsistent with men having a high drive toward heterosexual sex.¹

Differences in attitudes toward pornography, prostitution, extramarital sex, and other sexual activities fit the same pattern of greater favorability in male than female attitudes. We think that multiple factors may intrude into and confound such attitudes, so we do not regard them as conclusive signs of greater male sex drive. Women might oppose prostitution, for example, out of fear that their boyfriends and husbands will contract diseases from them and infect the women. Then again, the men run the more direct risk of infection from prostitutes, and so one might have predicted from a medical risk standpoint that men would be more opposed to prostitution. In any case, these differences in permissiveness are consistent with the view that males have a stronger sex drive, but the ambiguities and alternative explanations render them unable to support clear conclusions by themselves.

A highly specific and relevant set of attitudes concerns liking for sex organs. One would predict that a person with a high sex drive would have more favorable attitudes toward sex organs than a person with lower sex drive.

Attitudes toward sex organs were assessed by Reinholtz and Muehlenhard (1995). They found that men held more favorable opinions of their own sex organs (i.e., their penises) than women held toward theirs (i.e., their vaginas). One might object that these judgments are confounded by the physical nature of the or-

¹There is also evidence that men who most strongly oppose homosexuality are also aroused by it, suggesting that opposition to homosexuality may be a kind of reaction formation designed to avoid acknowledging one's own desires (see Adams, Wright, & Lohr, 1996). This line of reasoning would support the view that men have stronger desires—hence the stronger opposition.

gans themselves, such as if the penis were inherently more lovable than the vagina, but this interpretation is contradicted by additional findings: Men rated their girlfriends' vaginas more favorably than the women rated their boyfriends' penises. Thus, men rated both their own and their partners' sex organs more favorably than women rated them.

Prevalence of Low Sexual Desire

An examination of sexual dysfunctions and their consequences within interpersonal relationships also supports the hypothesis that men have stronger sex drives than women. We have suggested that the optimal strength of sex drive would be intermediate, in the sense of being neither too high nor too low. If women are on average toward the lower end of that intermediate range, and if both genders are normally distributed around their respective means, then women should be more vulnerable than men to pathological or problematic patterns of very low (inadequate) sexual desire. Furthermore, if one assumes that both men and women will experience periods of low sexual desire in life, these should be more problematic to the degree that one's partner wants and expects more sexual activity. If men have stronger sex drives, then they are more likely than women to be distraught when their partner loses interest in sex, and so marital conflict (leading to presenting for therapy) should be more likely to focus on lack of sexual interest in the wife than in the husband. In other words, cases in which one person does not want to have sex should be more distressing to the partner who has a high sex drive, as opposed to a low one.

Hypoactive sexual desire disorder (HSDD) is officially defined by the American Psychiatric Association (1994) as constantly low or absent desire for sexual activity or sexual fantasies, a condition that is distressing to the person and is not caused by a medical or substance abuse disorder. A recent review of hypoactive sexual disorder (Beck, 1995) highlighted differences in the prevalence of HSDD diagnoses as a function of gender. Significantly more women than men are diagnosed with HSDD, consistent with the view that women are more vulnerable to problems of low sexual desire. Beck (1995) noted that low sexual motivation is among the most common complaints in sex therapy. A study of over 900 clients who were being seen for a variety of sexual dysfunctions confirmed the frequency of the complaint, with 65% of all clients being diagnosed with HSDD. More germane to this analysis, 81% of those diagnosed with HSDD were women (475 women out of 588). Thus, women appeared to be more vulnerable than men to the problem of low sexual desire by a rate of about four to one (Segraves & Segraves, 1991).

Other therapy studies have confirmed that lack of libido is more common among women than men. Hawton and Catalan (1986) tallied 154 cases presenting for sex therapy. The problem of "impaired sexual interest" was the most common problem (58%) among female patients but the least common problem (4%) among male patients. Rosen and Leiblum (1989, p. 21) confirmed that the diagnosis of inhibited desire is more commonly given to women than men. Leiblum and Rosen (1988) reported elsewhere that their clinical observations supported the conclusion that "men have a more insistent and constant sexual appetite" (p. 13) than women. Clinical observations by Kaplan (1979) likewise led to the conclusion that sexual desire is more consistently strong and less easily stifled in men than in women.

A study of sexual dysfunctions in Denmark (Ventegodt, 1998) confirmed the patterns of problematic sexual desire found in North American studies. Among women, one of the most frequently reported sexual problems (11% vs. 3% of men) was decreased sexual desire, whereas among men the lack of a suitable and willing sex partner was the most common complaint.

Clinical cases of low or absent sexual desire suggest biological factors may be relevant. A study comparing 15 women with lifelong absence of sex drive versus a control group of women with normal sex drive revealed that the only endocrine measure to distinguish between the groups was bloodstream levels of free testosterone, which were significantly lower in the patient sample (Riley & Riley, 2000).

Meanwhile, an attempt to assess the frequency of various sexual dysfunctions in normal (nontherapy) couples likewise found that reports of lack of sexual desire or sexual interest were more common among women (35%) than men (16%; Frank, Anderson, & Rubinstein, 1978). This finding helps rule out the potential confound that the difference in therapeutic presentation is due to the greater willingness of women to come forward rather than the greater prevalence of hypoactive sexuality. In other words, the same pattern is found both in therapy clinics and outside of them: More couples struggle with low sexual desire in the woman than in the man.

Similarly, a study of the frequency of disagreements caused by one partner being reluctant to engage in sexual activity revealed consensus among both male and female participants that female sexual reluctance was a far more common source of disagreement than male reluctance (O'Sullivan & Byers, 1995). One study (Byers & Lewis, 1988) found that at least once a month 47% of heterosexual couples disagree with their partner about sex. In this study, it was always the case that the man wanted to engage in a particular sexual behavior and his partner did not. Paired with the data on hypoactive sexual desire, these studies suggests not only that women are more likely to be the reluctant

partner but that there is conflict caused by the discrepancy between men's and women's desired level of sexual activity. Perhaps when the man is the reluctant partner, the woman does not become upset by the prospect of less sexual activity.

A study on marital adjustment and sexual desire (Trudel, Landry, & Larose, 1997) also found that the woman was significantly more likely than the man to report low sexual desire. Moreover, this study revealed that low sexual motivation was related to marital adjustment problems. Beck (1995) also reported that hyposexuality is strongly related to poor dyadic adjustment (e.g., Stuart, Hammond, & Pett, 1987; Trudel, Boulos, & Matte, 1993). A study of sexuality and relationship indexes found that sexual desire discrepancies (the difference between each partner's level of sexual desire) predicted overall relationship satisfaction (Davies, Katz, & Jackson, 1999). A discrepancy in which the woman has lower sexual desire than the man appeared to be especially problematic, with these women reporting lower relationship and sexual satisfaction than women who matched or exceeded their partner's level of sexual desire.

Buss (1989) hypothesized that differences in male and female sexual strategies would lead to specific types of conflict between a sexually active heterosexual couple. He proposed and found that women become upset about men's strategy of sexual assertiveness (e.g., wanting sex sooner after meeting, wanting more frequent sex, being more persistent to have sex, and wanting more partners than the woman), whereas men become upset about women's sexual strategy of sexual restraint (e.g., withholding sex, having lower desire for sex, and needing certain conditions to be met before engaging in sexual activity). Buss (1989) showed that not only do these problems arise between men and women on a general level, they also operate within couples to predict both marital and sexual satisfaction.

A nonclinical sample of never married college students by Carroll, Volk, and Hyde (1985) provided converging evidence. Far more women (19%) than men (2%) claimed that they never felt that they wanted or needed sex. Moreover, even when sexual tension or desire was felt, it was apparently less intense among the women. Most of the men (80%) but only 25% of the women said they preferred to have sex as a way of releasing sexual tension when they did feel it. Instead, women said they preferred to engage in vigorous physical activity (50%) or even just watch television (20%).

Therapies for sexual desire problems have focused on the difference between men's and women's sexual motivation. Hurlbert and his colleagues (Hurlbert, White, Powell, & Apt, 1993) studied couples in which the woman has hypoactive sexual desire and found evidence that including couples in sex therapy treatment is more effective than a women-only format. Similar results have

been reported by MacPhee, Johnson, and van der Veer (1995). These findings suggest that low sexual desire in the woman becomes a problem at the level of the couple. Low sexual desire in the man has not received commensurate attention as a cause of couple adjustment problems, most likely either because it is a less common occurrence or is less troublesome to the partner.

In sum, women are more likely than men to report a serious or pathological lack of sexual desire, and couples have more conflicts and problems because of a female than a male lack of sexual desire. If these findings were isolated, they might be interpreted to mean that female sexuality is more vulnerable (than male sexuality) to being interrupted by stress or other situational factors. They are however consistent with the view that women have on average less sexual desire to start with, and so more women than men will fall into the spectrum of very low sex drive—indeed too low, as defined either by themselves or their partners.

Self-Rated Sex Drive

Last, we turn to the direct reports and classifications about sex drive. Mercer and Kohn (1979) included items asking people to rate the strength of their sex drive. Women rated their sexual urges as less strong than men rated men's. Although one may question whether people have an accurate basis for comparing their own feelings against those of others, the results do point toward stronger sex drives in men. In studies of sexual desire among healthy people, men report higher levels of sexual interest than women, regardless of age. For instance, Beck et al. (1991) found this pattern among college students, Pfeiffer, Verwoerd, and Davis (1972) found this pattern among middle-aged men and women, and Bretschneider and McCoy (1988) found gender differences in sexual desire in people ages 80 to 102. A study (Mehrabian & Stanton-Mohr, 1985) on emotions, sexual desire, and gender found uniformly greater sexual motivation among males than females across all emotional states.

We have also already mentioned Leigh's (1989) study, which examined reasons for having and for not having sex. Women were more likely to cite lack of interest and enjoyment as a reason for not having sex (Leigh, 1989).

Adolescent sexual patterns were studied by Buzwell and Rosenthal (1996). They classified their sample of high school students into five categories, ranked in order of increasing sex drive and experience: sexually naive, sexually unassured, sexually competent, sexually adventurous, and sexually driven. The lowest category (i.e., *sexually naive*) was defined by showing minimal or no sexual activity. Girls outnumbered boys three to one in this category. In contrast, the second highest category of *sexually adventurous* peo-

ple was defined by being highly comfortable with sex, highly confident about it, and highly active in exploring sex. It was populated mainly (85%) by boys. The extreme high category of *sexually driven* individuals was defined by seeming to be obsessed with sex, and it was composed almost entirely (97%) of boys. In sum, girls clustered at the low end of sexual desire and activity, whereas boys predominated at the high end.

Converging evidence from another culture was provided by Useche, Villegas, and Alzate (1990), who surveyed high school students in Colombia. The young men reported more intense and more frequent sexual desire than the young women.

Parallel results were found with homosexuals by Bell and Weinberg (1978), although when data were tabulated by race there were some racial differences and the small number of Black respondents did not show clear gender differences. Among White respondents, however, gay males were more likely than lesbians (37% vs. 24%) to be found in the maximum category of high sexual interest. Meanwhile, lesbians were more likely than gay males (42% vs. 22%) to be found in the low sexual interest category.

In the preceding section, we cited evidence that couples seeking therapy often conform to the pattern that the woman is less interested in sex than the man is (and the reverse is relatively rare). Converging evidence from normal middle-aged adults with partners, Johannes and Avis (1997) found that men had higher levels of sexual desire than women. These findings also indicate that self-reported sex drive is consistently higher in men than women.

Evidence: Other Constructs

Our focus has been on the strength of the sex drive, which we defined as intrinsic motivation to engage in sex. To avoid overgeneralization of our findings, we briefly consider several other constructs (sexual capacity, enjoyment, and extrinsic motivation) that might seem to be related to the sex drive but that will not necessarily yield similar conclusions.

The first of these is sexual capacity. By virtue of the very biological structure of the sex organs, women have superior capacity to men. Women can copulate with more consecutive partners than men, can copulate for a longer period of time, and can achieve more orgasms during a single session than men can. We can think of no aspect of sex in which men's capacity for sexual performance matches or exceeds women's, other than the reliable incidence of orgasm. Orgasm is, however, arguably an index of pleasure rather than sexual performance per se, and indeed the potential orgasmic capacity of women undoubtedly exceeds

men's anyhow. Women clearly have a greater overall capacity for sex than men.

Enjoyment is considerably more difficult to assess than either drive or capacity. Clearly there is considerable variation within a single person in terms of how much enjoyment one gets from sex, and these individual fluctuations are likely to be more substantial and meaningful than any difference between the genders that is based on very broad averages. Moreover, there is no reason to assume that the within-person variation is the same across gender, and indeed Baumeister (2000) concluded that women exhibit significantly higher within-person variance in many sexual variables. We think it quite likely that women's enjoyment of sex varies more than men's, so that women's maximum enjoyment may exceed that of men, even if on average men enjoy it more than women.

Orgasm may be taken as one measure of sexual enjoyment, but it is admittedly crude and incomplete, and certainly many people report enjoying sex without orgasm. Even if one does use it as an index of enjoyment, however, the results are mixed. Women are more likely than men to experience multiple orgasms during a single copulation, and women are also more likely than men to experience no orgasm during a single copulation (e.g., Laumann et al., 1994). Thus, women's capacity for sexual enjoyment may have a higher peak than men's, but across all sexual acts women's average level of sexual enjoyment may be lower than men's. Put more simply, women can occasionally enjoy sex more than men can, whereas men actually do enjoy sex more consistently than women do. Also, men probably experience more orgasms than women over a lifetime, especially if masturbation is included in the tally. Given the current state of knowledge, we regard the question of which gender enjoys sex more as unanswerable.

A third concept is extrinsic motivation. That is, motivations can be distinguished into intrinsic and extrinsic (Deci, 1971; Lepper, Greene, & Nisbett, 1973; Lepper & Greene, 1978). *Intrinsic motivation* is defined as desiring to perform an activity for the sake of the direct satisfaction of performing the activity itself. In contrast, *extrinsic motivation* involves wanting to perform an activity for the sake of some consequence that it may bring. In other words, with extrinsic motivation the activity is a means to an end, whereas with an intrinsic motivation the activity is an end in itself.

Applied to sex, the extrinsic motivation concept entails that people may desire to engage in sex, not for the sake of enjoying the sexual activity itself, but because it serves as a means toward a desired end. Although extrinsic motivations do not attest to the existence of an intrinsic drive and hence are not directly relevant to the question of drive strength, they can be quite powerful and effective at causing behavior. Extrinsic motivation may be especially relevant to female sexual motivation

because of the plasticity of the female sex drive. Based on a broad literature review, Baumeister (2000) argued that the female sex drive is more responsive than the male drive to situation and cultural influences, and a greater susceptibility to extrinsic motivators would be a plausible extension of that pattern.

Having a child would be one extrinsic goal of sex. It is plausible that the desire for a child sometimes motivates women to desire sex. Janus and Janus (1993) found that men were slightly more eager than women to report wanting to have a baby regardless of whether they married or remained single, and also more likely than women to agree that parenthood is the highest human attainment. Still, these findings do not rule out the hypothesis that women actually engage in sex for the extrinsic goal of having a baby more often (or more eagerly) than men.

Another extrinsic motivation would be to create or maintain a long-term relationship. It is a familiar observation that women require a relationship context for sexual activity more than men do. We have already presented findings that men are more favorable than women toward engaging in *casual sex*, defined as sex without a relationship context (Oliver & Hyde, 1993). Herold and Mewhinney (1993) found that male patrons of a singles bar were more favorable than female patrons toward casual sex. Carroll, Volk, and Hyde (1985) found that women reported substantially lower desire than men for sexual intercourse in the absence of emotional intimacy. Regan and Berscheid (1996) found that more women than men (35% vs. 13%) described love and emotional intimacy as important goals of sexual desire, whereas men were more likely than women (70% vs. 43%) to say that the sexual activity itself was the goal of sexual desire. These results are consistent with the view that men are more intrinsically and women more extrinsically motivated in sex: Male desire aims at the sexual activity itself, whereas female desire aims beyond it toward other outcomes and consequences.

Extramarital sex is arguably an especially good index of the desire for sex without a relationship, because the person already has a relationship (by definition), and the extramarital activity can involve either a temporary fling or an emotionally intense relationship. Spanier and Margolis (1983) surveyed people who had engaged in extramarital sex about their most recent experience. Unfaithful men far outnumbered women in the category of one night stands (29% vs. 5%), whereas unfaithful women outnumbered men in the category of long-term love relationships (41% vs. 11%).

The use of sex to obtain love is related to the motive to maintain a relationship. The most common reason that women reported for initiating sexual activity was to receive love and intimacy (M. Brown & Auerback, 1981). For men, the most common reason was to obtain a release of sexual tension, which suggests an intrinsic motivation. Both genders said that the wish to express

their own love was the second most important reason. Julien et al. (1992) found that husbands and wives agreed that sexual initiatives by husbands tended to stem from an internal (thus intrinsic) need, whereas the wives' initiatives were perceived as motivated by love. Thus, both genders perceive husbands as (intrinsically) motivated to have sex for its own sake, whereas women are seen as desiring sex as a means to obtain love.

One might also consider money as a relevant extrinsic motivation, especially insofar as it has been featured in research on extrinsic motivation from the very earliest studies (see Deci, 1971). Prostitutes obtain money by means of engaging in sexual activity, and the desire for money can produce relatively high levels of sexual motivation. It is difficult to draw firm conclusions about gender differences in financial motivations for sex, however, because the opportunities for men to obtain money from sex are much more limited than for women, and conversely, in many societies men have had far more diverse ways to make money (apart from prostitution) than women. Still, we concede the greater participation in prostitution by women than men could be interpreted as de facto evidence of higher extrinsic motivation for sexual activity.

In conclusion, in this section we have considered several constructs that might seem part of the sex drive but that deserve to be distinguished conceptually. Our conclusions about gender differences in strength of sex drive should not be generalized to these other constructs. First, sexual capacity is not the same as sex drive, and women may well have a greater sexual capacity than men, in the sense of being able to copulate with more partners or for a longer period of time without interruption and in the sense of being able to have more orgasms on any given occasion. Second, sexual enjoyment is not the same as sex drive. Although precise comparisons seem difficult if not impossible, we speculate based on limited evidence that women's enjoyment of sex is more variable than men's, with probably a lower mean enjoyment but a greater maximum enjoyment. Third, the sex drive refers to intrinsic motivation, but extrinsic motivation can also be quite powerful, and the two are distinct. It seems quite plausible that women surpass men in extrinsically motivated sex, such as in engaging in sex to obtain money or construct a relationship, but ambiguities in the evidence make a firm conclusion impossible at present.

Discussion

We have surveyed a broad range of available evidence on the relative strength of sex drive, defined in terms of sexual motivation. The evidence was extensive, methodologically diverse, and consistent. By all measures, men have a stronger sex drive than women.

Men think about sex more often, experience more frequent sexual arousal, have more frequent and varied fantasies, desire sex more often, desire more partners, masturbate more, want sex sooner, are less able or willing to live without sexual gratification, initiate more and refuse less sex, expend more resources and make more sacrifices for sex, desire and enjoy a broader variety of sexual practices, have more favorable and permissive attitudes toward most sexual activities, have fewer complaints about low sex drive in themselves (but more about their partners), and rate their sex drives as stronger than women. There were no measures that showed women having stronger drives than men.

At the outset, we noted that the concept of sex drive encompasses both frequency and intensity of sexual desires. The bulk of the evidence we have reviewed refers to frequency: Men clearly have more frequent sexual desires and desire more frequent sex. The evidence on intensity is less conclusive, however, although part of that may simply reflect the greater difficulty of measuring intensity than frequency. Still, if one concedes that men have more frequent sexual desires, is there any clear evidence of a difference in intensity?

Many sexual behaviors are measured two ways, frequency and incidence. Frequency refers to how often the person engages in the activity, whereas incidence refers to the proportion of the sample that has ever engaged in it. One could interpret the frequency measures as indicative of the frequency of desire, whereas incidence reflects the intensity. By that reasoning, the evidence for a gender difference in intensity is not far behind the difference in frequency. For example, incidence of masturbation is significantly and substantially higher among men than women, across many studies (Oliver & Hyde, 1993).

There are several other findings that suggest men have more intense sexual desires, although we continue to regard the difference in frequency as better supported. Men like a greater variety of sexual practices and activities than women, a difference that does not reduce easily to a difference in frequency of desire. The greater reluctance of men to live without sex, even when personal values and community support strongly encourage celibacy (as among priests), suggests more intense desires. Men thus have less success than women at restraining their sexual desires, although like all failures in self-control there is ambiguity as to whether stronger desires or weaker inner control is responsible. Men are less likely than women to assert that their sexual desires can be controlled.

Three findings point most strongly toward a difference in intensity. First, men make more sacrifices than women to obtain sex, and sacrificing one resource for another is a reasonable operationalization of the intensity of motivation for obtaining sex. Second, women report lack of sexual interest or desire more than men.

Third, men generally rate their sexual desires as stronger than women rate women's desires.

Hence we conclude that the data indicate gender differences in both frequency and intensity of sexual desires, although we reiterate that the data are more conclusive with regard to frequency. Either frequency or intensity alone would be sufficient to conclude that a gender difference in sex drive exists, however, and so the broad conclusion is not in doubt.

In general, then, the weight of evidence points strongly and unmistakably toward the conclusion that the male sex drive is stronger than the female. It is clear that men experience more frequent sexual desires, and it seems apparent (though less certain) that men experience more intense sexual desires. Any conception of sexual desire or drive that does not recognize frequency of feelings of desire, range and frequency of fantasy, preferred number of partners, ease of arousal, preferred frequency of sex, time and money invested, masturbation, desire for variety of activities, and the rest of the variables covered previously would have to be so peculiarly constructed as to be almost incoherent.

We do not wish this conclusion to be misunderstood or to be misused for ideological purposes. The difference in sex drive does not mean that women do not enjoy sex, nor does it mean that women do not desire sex. It certainly does not mean that women should not desire sex or that they should feel guilty over sexual desire or pleasure. There is also substantial variance within individuals, and factors such as stress or sleep deprivation could certainly contribute to changes in frequency or intensity of sex drive within the same person. Our conclusion is merely that on average men desire sex more strongly and more frequently than women. Also, we reiterate that we do not see having a stronger sex drive as in any way better than having a milder one—indeed, either extreme of sexual desire can be problematic for both individual and society. Furthermore, the difference in sex drive should not be used to justify coercive or exploitative behavior either. Men may not be able to prevent themselves from desiring sex under many circumstances, but they can prevent themselves from acting on those desires. By the same token, women may not want sex as much as men, but they can refrain from exploiting men's dependency that arises from the difference in sex drive.

The concept of sex drive, if defined in a fairly precise manner, can be effectively distinguished from other concepts, and the greater male sex drive does not entail greater male sexuality in those other terms. We suggested that women's capacity for sex may be greater than men's in the sense that women are capable of engaging in more sex and having more orgasms than men. We concluded that there is no definite answer to the question of whether men enjoy sex more than women. We also suggested that women may surpass

men in extrinsically motivated sex, although a definite conclusion is elusive in that sphere too. For present purposes, the crucial point is that the greater male sex drive does not entail greater capacity, greater enjoyment, or greater extrinsic motivation.

Another limitation would be that these data are only broad averages. It is not safe to conclude that in all marriages the husband will want sex more than the wife. Certainly there are some men with quite low sex drives and some women with quite high ones. Miller and Fishkin (1997), for example, found that the median number of desired sex partners was the same (1.0) for both genders even though the means were wildly different (2.7 vs. 64.0). Sexual conflicts of interest will tend to take the form of men wanting more, earlier, and more varied sex than their female partners, but undoubtedly there will be some cases in which the woman's sexual desires are stronger than her male partner's.

The findings of Miller and Fishkin (1997) raise the possible objection that the consistent findings of greater male sex drive may be produced by a small minority of men or women who skew the data. In other words, a small number of sexually unresponsive, uninterested, and unmotivated women could bring down the mean for all women or a small number of hyperresponsive, hyperaroused, and hypersexual men could bring up the mean for all men. The preponderance of men and women would conceivably have roughly equivalent sex drives, in that view.

However, several lines of evidence speak against the view that a small minority drives the gender difference in sex drive. First, data on masturbation—an area that shows some of the strongest and most consistent gender differences (Oliver & Hyde, 1993)—reveal that the vast majority of men (84%), but only about half of women, engage in masturbation (Jones & Barlow, 1990). Similarly, when asked if they masturbated at least once a year, 80% of boys but only 25% of girls reported at least yearly masturbation (Sigusch & Schmidt, 1973). Prevalence data like these are especially relevant because each person is allowed to be counted only once and in a binary fashion; accordingly, extreme minorities cannot taint the overall results. Second, research by Byers and Lewis (1988) on disagreements about sex has found that almost half of all heterosexual couples disagree about sex, and every single disagreement involved the man desiring some sexual activity that his female partner did not. Likewise, men and women agree that female reluctance about sex is much more likely to occur than male sexual reluctance (O'Sullivan & Byers, 1995). Thus, it does not appear that the majority of heterosexual couples are evenly matched in sex drive.

Nevertheless, we exhort future researchers to attend carefully to the statistical distribution patterns in studies on gender and sex drive (and to provide thorough

information in their published reports) so that it will become possible to forge statistically precise estimates of the gender difference in sex drive, including its size and shape as well as how the difference varies across acts and circumstances. For example, it remains possible that the gender difference in sex drive dwindles or even effectively disappears during the blossoming of passionate love that attends rapidly rising intimacy, so that many couples will have the temporary experience of equal sexual desire (see Baumeister & Bratslavsky, 1999)—but when that phase ends, the partners return to their baseline level of sex drive, and the gender difference reemerges, possibly to the acute surprise of the couple. Further research is needed to support or invalidate such theoretically important possible exceptions and other variations in the discrepancy.

Are Differences Rooted in Biology?

Most of the data we have reviewed pertain to the late 20th century and to modern, Western cultures. It is clear that during that time, men in Western cultures have had a stronger sex drive than women. Yet does that mean the difference is biologically innate? Obviously, human biology has changed relatively little during recent centuries and, as reviewed subsequently, there is increasing evidence for the role of hormones in determining human sexual behaviors and motivations.

Our review of the literature indicated that role of androgens (e.g., testosterone) was crucial in producing sex drive. We focused on the androgens for several reasons. First, scientists' interest in the effects of testosterone have yielded a wealth of data on its effects. Second, testosterone is one of the primary organizational and activational hormones that differentiates men and women. Although both women and men have natural supplies of testosterone in their bloodstream, the amount of testosterone varies significantly between the genders. On average, men's blood testosterone levels are 1,000 nanograms per deciliter, whereas women's blood testosterone levels are only one seventh or one eighth of this amount (see Dabbs, 2000; Mazur & Booth, 1998). Postmenopausal women have especially low levels of testosterone (regardless of whether menopause occurs naturally or as a result of surgical procedures). Most commonly, surgically induced menopause is the result of an oophorectomy (i.e., removal of the ovaries and adrenals) or hysterectomy (i.e., removal of the uterus). Third and perhaps most germane to this analysis, evidence from the animal and human literatures suggests that androgens are responsible for active initiation of sexual activity (i.e., proceptivity), whereas estrogens are responsible for passive acceptance of sexual activity (i.e., receptivity; Beach, 1976; De Jonge & Van de Poll, 1984; Sherwin, 1988).

In a recent study, researchers found that high doses of testosterone given to oophorectomized women via a skin patch (i.e., transdermally) improved sexual functioning and sexual motivation relative to receiving a placebo (Shifren et al., 2000). Frequency of sexual activity, reports of pleasure and orgasm, sexual arousal, and sexual desires and thoughts were most strongly affected by testosterone therapy. For example, the percentage of women reporting sexual fantasies at least once a week was 12% at baseline, 10% for the placebo group, and 24% for women in the high testosterone group. Similarly, masturbation at least once a week was reported by 3% of women at baseline, 5% of women receiving the placebo, and 10% of women receiving high testosterone treatment. The percentage of women reporting sexual intercourse at least once a week also increased with testosterone treatment (23% of women at baseline vs. 35% of women during placebo treatment vs. 41% during high testosterone treatment).

A study of 35 female-to-male transsexuals and 15 male-to-female transsexuals also supports the impact of androgens on sex drive. In a longitudinal design that tested patients before and 3 months postoperatively, Van Goozen, Cohen-Kettenis, Gooren, Frijda, & Van de Poll (1995) found a decrease in sexual interest and arousability among the male-to-female transsexuals, who were administered anti-androgens and estrogens. In contrast, the female-to-male transsexuals, who were administered testosterone, reported heightened sexual interest and arousability. These data highlight the importance of testosterone in producing meaningful changes in sexual arousal and interest, even over a relatively short time.

Differences in naturally occurring testosterone levels distinguish between two subtypes of lesbians, "butch" versus "femme" (Singh, Vidaurri, Zambarano, & Dabbs, 1999). Lesbians classify a butch lesbian (as opposed to being a femme lesbian) by body build and weight, gait, style of dress, and attitude, with butches being bigger in size, more active, and less pretty than femmes (Loulan, 1990). Degree of self-rated butchness was predicted by testosterone level ($\beta = .51$; see similar findings by Pearcey, Dochert, & Dabbs, 1996), a relation that was statistically significant even after controlling for related factors such as body weight and age. Additional data from this study revealed that butch lesbians were involved in more sexual relationships in the past 2 years, reported less desire to give birth but reported more desire to raise children relative to femme lesbians, and were less likely to adopt a submissive style of sexual participation. Butch lesbians also reported greater enjoyment of erotica relative to heterosexual women. In discussing their findings, Singh et al. (1999) related the style of butch lesbians to sexual behaviors typical of men; their findings regarding higher testosterone levels among these

women corroborates our conclusion that testosterone is an important determinant of sexual drive.

Despite our conclusion that androgens (especially testosterone) are a major component of the biological basis of sexual motivations, we also found many studies that failed to find a significant association. We found as many studies reporting a significant relation between testosterone levels in men and women and sexual appetites (e.g., Bancroft, Sanders, Davidson, & Warner, 1983; Dabbs & Mohammed, 1992; Sherwin, Gelfand, & Brender, 1985; Udry, Billy, Morris, Groff, & Raj, 1985; Van Goozen, Wiegant, Endert, Helmond, & Van de Poll, 1997) as we found studies reporting no relation (e.g., Alexander & Sherwin, 1991; Alexander, Sherwin, Bancroft, & Davidson, 1990; Galyer, Conaglen, Hare, & Conaglen, 1999; Kirchengast, Hartmann, Gruber, & Huber, 1996). Indeed, we wonder how many studies that found no association between androgens and sexuality were never published. Still, when effects are found, the direction is consistent: Higher testosterone is linked to higher sex drive. We found no studies in which higher testosterone predicted lesser sex drive.

Even within a given study, the strength of the link between sexuality and testosterone varies as a function how testosterone is measured and which component of sexual desire or functioning is assessed. Some researchers focus on total testosterone, which is comprised of testosterone bound to globulin, testosterone bound to albumin, unbound testosterone, and free testosterone, whereas other researchers focus solely on free testosterone, which is considered the physiologically active portion (see Alexander et al., 1990). In addition, researchers emphasize different facets of sexuality, which vary in their relation to specific measures of testosterone (Sherwin, 1988). For instance, in a study of healthy young women (Van Goozen et al., 1997), free testosterone was highly correlated with sexual interest, frequency of intercourse, and frequency of orgasm, but total testosterone was correlated with frequency of masturbation. In a study of healthy young men (Alexander & Sherwin, 1991), free testosterone was positively correlated with level of reported sexual arousal after listening to an audiotape depicting an erotic heterosexual scene. However, free testosterone failed to predict attentional bias for sexual stimuli during a dichotic listening task (during which the erotic tape was played), a response that could be considered an indicator of sexual interest or motivation.

Although it is well known that sex drive and sexual functioning are influenced by social factors (see Baumeister & Tice, 2001), there is some suggestion that the role of biology is moderated by social factors more for women than for men. In a longitudinal study of over 200 teen and preteen girls (Halpern, Udry, & Suchindran, 1997), both level of testosterone and change in testoster-

one predicted reports of first act of sexual intercourse. However, religious service attendance moderated the testosterone/sexual-intercourse link, such that more frequent attendance attenuated the association.

A recent review of the literature on sexual desire and hormones (Regan, 1999) concluded that there exists a threshold effect, suggesting that testosterone levels above a certain critical level do not yield additional increases in sexual behavior. Moreover, there are suggestions that this threshold effect applies more to women, who are sensitive to smaller amounts of testosterone (see Dabbs, 2000) and who are influenced more by social factors than men. For example, investigations of hormonal and social influences on sexuality among boys and girls (Udry et al., 1985; Udry, Talbert, & Morris, 1986) found that among boys, the best predictors for autosexual and partnered sexual activity were levels of testosterone. Among girls there were correlations between testosterone and sexual activity, but the strongest predictors were social factors such as peer group interactions and the sexual activities of close friends.

However, some researchers argue that a lack of clarity on the effects of hormones or physiological factors on sexual functioning among women reflect resistance to systematic research on the topic, as well as inadequate funding (e.g., Bartlik, Kaplan, Kaminetsky, Roentsch, & Goldberg, 1999). Thus, future research may illuminate more precisely the role of biology in women's sexual motivation.

Certainly there is more to the biological aspects of sexual motivation than androgens. Increasingly researchers are examining neurological correlates of sexual desire (albeit mainly in animals). A review of the relations among neuroanatomical, neurochemical, and neuroendocrine systems and sexual responses (Pfaus, 1999) emphasizes how these systems work in conjunction with hormone levels to influence partner preference, erections, orgasm, sexual desire, and sexual satisfaction (see also Meston & Frohlich, 2000). Research has also revealed that peaks and troughs in sexual desire can be linked to changes in estrogen levels within menstrual cycle phase and as influenced by oral contraceptives (e.g., Adams, Gold, & Burt, 1978). However, a study (Sherwin et al., 1985) of surgically postmenopausal women receiving high doses of testosterone, alone or in conjunction with estrogen, indicated this led to increased sexual desire, fantasies, and sexual arousal significantly more than women receiving only estrogen or a placebo. A similar effect was found among women receiving either therapy with testosterone and estrogen or estrogen alone. Women whose therapy included testosterone in addition to estrogen showed increased sexual activity, satisfaction, pleasure, and orgasm frequency (S. R. Davis, McCloud, Strauss, & Burger, 1995). Last, surgically induced postmenopausal women who receive estrogen therapy continue to report depressed sexual desire, activity, and pleasure (Nathorst-Boos & von Schoultz, 1992;

Sherwin et al., 1985; Shifren, Nahum, & Mazer, 1998) and overall decreased well-being (Nathorst-Boos, von Schoultz, & Carlstrom, 1993). Researchers have thus concluded that a lack of sexual interest and activity is the result of insufficient androgen production, although these latter examples may be cases in which androgen threshold theories apply.

There may also exist a biological basis for gender differences in sex drive through differences in genital size, a factor hypothesized to subsequently influence sexual motivation through learning experiences (Baldwin & Baldwin, 1997). Differences in the size of the penis versus the size of the clitoris is likely to be a primary reason that one's own sexual arousal is much more apparent to a man than to woman (Knoth et al., 1988). Hence, a review of biosocial explanations for differences in sex drive as a function of gender concludes that as a consequence of women's decreased awareness of their sexual responsiveness, they may become less interested in and less able to enjoy the pleasurable aspects of sex.

A final point about biology and sexual motivation, and one that was mentioned briefly earlier, is that there may be evolutionary reasons for men to have a stronger sex drive than women. Sexual strategies theory (see Buss, 1998; Buss & Schmitt, 1993) proposes that because the investment costs of sexual activity are so much higher for women than men, women should be sexually more selective and less promiscuous than men. We think this argument also extends to differences in sex drive such that higher costs of sex should promote a weaker motivation for sex. Consider the potential consequences of a strong sex drive in a woman. She may engage in frequent and wide-ranging sexual practices with many sexual partners and, as a result, she is likely to become pregnant. Becoming pregnant then requires at least a 9 month commitment for the woman, whereas these same behaviors and consequence require from a man only as much time as he chooses to commit. Indeed, research suggests that the primary messages communicated by parents to their daughters about sex involve menstruation and pregnancy (Roberts, Kline, & Gagnon, 1978). Thus, given differential costs to engaging in sexual activity, there may be evolutionary reasons to promote different sexual motivations in men and women. Moreover, women may want sex for reasons outside of the sexual activity itself, such as wanting sex to foster feelings of love for each other, to gain material resources, or to become pregnant.

Cultural Influence

The possibility of cultural influence must be acknowledged, and cultures have certainly changed. Some recent authors have begun to look at the accumulating

evidence and yet they draw very different conclusions. Schwartz and Rutter (1998) considered evidence from the National Health and Social Life Survey (Laumann et al., 1994) and the large “American couples” survey (Blumstein & Schwartz, 1983) and repeatedly came down on the side of social constructionist explanations, such as by noting that the sexual revolution seems to have brought about changes in female sexuality that revealed how social pressures could override biology.

Rigorous data from other cultures are difficult to find, given cultural mores about permissiveness of talk about sex. Thus, it is perhaps not surprising that the majority of the studies cited in this article were drawn from an American sample. Indeed, if the null hypothesis that there are no differences in sex drive between men and women were correct, it should have been more observable in responses by people of the United States, given this culture’s emphasis on sex and sexuality.

Support for our main conclusion of differences in sex drive comes from an impressive survey of 890 Indian schoolchildren ages 10 to 17 (Tikoo, 1997). On almost all statements regarding sexual activity in various situations, girls were more likely than boys to say that a given sexual behavior was not appropriate. For instance, disagreement with the statement, “it is OK for a boyfriend and a girlfriend to have sex” was higher among girls (51%) than boys (34%). More girls than boys also disagreed more with the statements “it is OK for good friends to have sex,” (51% vs. 42%) and “sex is OK before marriage” (51% vs. 43%). Self-reports of behavioral data also suggest lower sex drive among Indian girls, with 88% of the girls saying they had never been sexually attracted to a boy and only 60% of boys saying they had never been sexually attracted to a girl. In addition, twice as many boys than girls reported masturbating.

One objection to these data would be that perhaps the students were merely repeating what they had been taught by their culture. However, there is evidence to refute this interpretation, suggesting instead that sexual experience strengthened the differences in reports of sex drive. There was a significant difference in the endorsement of the statements “boys like sex more than girls” and “girls want love more than sex” as a function of age category, such that students in grades 10 to 12 (who are approximately 15–17 years old) agreed more with these statements than did students in grades 6 to 9 (who are approximately 10–14 years old). Although these data were never correlated with sexual experience, older students did report more sexual experiences and higher frequency of sexual intercourse, behaviors that may have given them great and direct information with which to respond to these statements.

In India, male—but not female—members of the dominant culture will engage in sexual relations with Untouchables, despite the fact that any association with Untouchables is perceived as polluting, contaminating, and defiling (Mahar, 1972). Untouchables are

not male Indians preferred sex partners, but the fact that they are willing to have sex with them at all, despite the vileness of the reputation of Untouchables, is an indication of men’s strong desire for sex.

We noted in our review of the evidence that a study from the Netherlands (Vanwesenbeeck et al., 1998) also supports our conclusion of a weaker sex drive among women. This large-scale study of several hundred university students in the Netherlands found gender differences in attitudes about sex. Women scored significantly higher in a factor called Anxious Insecurity (comprised of items such as “I don’t know how to deal with sex”), a difference that was highly significant among both single ($p = .02$) and partnered ($p = .002$) women. Among women, this variable was positively correlated with Sexual Anxiety (sample item “Sexual desires make me worry”) and negatively correlated with Sexual Sensation Seeking. Men, conversely, scored significantly higher on the factors Sexual Compulsion (sample item “I find it difficult to control my sexual thoughts and actions”) and Sexual Sensation Seeking (sample item “I want to try out unusual sexual things”). These data converge with data from American samples to indicate that men have a stronger sex drive than women. Given the highly permissive attitudes about sex in the Netherlands, which would allow women to freely express their sexual desires, these data argue against a confirmation of the null hypothesis of no differences in sex drive as a function of gender.

A survey of 198 university students in Colombia also documented differences in sex drive (Alzate & Villegas, 1994). Although conducted to assess whether sexual practices have changed since an awareness of the AIDS virus, data on frequency and intensity of sexual desire showed that men have a stronger sex drive than women. Thus, a South American sample of young men and women in college, participants who are comparable to those included in North American studies, is similarly supportive of our conclusions.

Another source of cross-cultural information is anthropological studies of gender and sexuality. Although none explicitly considered whether men and women differ in sex drive, these writings suggest that men have greater sexual motivation. Gutmann’s (1997) review of masculinity notes that in many cultures, maleness is often connected to genitalia. One anthropologist wrote the phrase “men who, as naturally promiscuous, ...” (Weeks, 1985, p. 159) almost as a stated fact. According to Gutmann (1997), some ethnographers assume that there is a stronger male sex drive and subsequently focus on the mechanisms (e.g., power inequalities and male domination) responsible for this difference (see, e.g., Godelier, 1986). A review of passionate love and, specifically, sexual desire (Hatfield & Rapson, 1993) concluded that there exists much more similarity than differences in patterns of sexual desire among major cultural groups. However, the cross-cultural study of male versus female sexuality has been neglected, as two

anthropologists noted in stating that “... [f]or the study of erotics ... cross-cultural data are still too impoverished and decontextualized to truly compare masculinity and femininity, sexual excitement, and fantasy constructs” (Herd & Stoller, 1990, pp. 352–353). Despite this, the available anthropological and cross-cultural evidence suggests that men have a stronger sex drive than women.

Given our brief review of the evidence regarding the influence of biology and culture, we find ourselves leaning toward the interactionist argument. We acknowledge that it is famously difficult to provide unambiguous evidence that nature rather than culture is the sole determinant of behavior. No adult human being has escaped the influence of culture and socialization, and so it generally requires a leap of faith to ascribe some pattern to nature rather than culture. Certainly most of the evidence we have provided about sexual behaviors and feelings is based on people who have been influenced by culture. Nonetheless, there was not one definitive source of cross-cultural data to indicate that women had a stronger sex drive than men. In fact, cross-cultural data—even from countries with permissive sexual attitudes such as the Netherlands—supported our conclusion that women possess a weaker sex drive.

However, we think it fair to assume that there has been significant influence by culture and society aimed at suppressing female sexuality. A critical review of a broad assortment of evidence does indicate that culture has exerted some strong and one-sided efforts toward this end (see Baumeister & Twenge, 2001). So to some degree the relative mildness of female sexuality reflects cultural stifling, as Schwartz and Rutter (1998) and others have suggested.

Then again, even where cultural stifling has not seemingly had much influence, there do remain substantial differences in sex drive that may be linked to biological differences between men and women. As noted in the section on differences in sex drive, several findings indicate that women have less frequent or intense sexual desires than men even when cultural pressures do not selectively constrain female sexuality. Women have been encouraged to want sex within marriage, but they still want less than men. The culture’s attempts to stamp out masturbation were directed primarily at young men, not young women, and if cultural programming could succeed we would expect that men would masturbate less than women, but the reverse is true. Catholic clergy all subscribe to the same, single standard of sexual purity, but men find it much more difficult to live up to this ideal than women.

The best bet is therefore probably that society’s influence may have at various times tried to increase or reduce the gender difference in sex drive, but it did not likely reverse the natural order of things, nor did it create the difference out of nothing. Probably gender differences in sex drive reflect a combination of natural and cultural influences.

Moreover, the emphasis in this review on relatively recent data should have biased the findings against the con-

clusion that a sex difference exists. The late 20th century followed the sexual revolution(s) of the 20th century, which are widely recognized as having liberated female sexuality from cultural suppression (at least to a substantial extent). Any culture-based differences in sex drive should be smaller, not larger, in the late 20th century samples than in what studies of different cultures or eras would find.

So what can we conclude about whether the difference in sex drive reflects innate, biological patterns? We think the evidence indicates that both cultural forces and biological tendencies are involved. Evidence of historical and cultural variation in the degree of difference in sex drive points toward culture as playing a role. On the other hand, the finding of greater male sex drive does not seem limited to particular historical periods or cultural circumstances (although admittedly the vast majority of the available evidence is based on Western or Westernized cultures), and it is found even when culture encourages female sexuality. At present we regard it as highly unlikely that either nature or culture will emerge as solely responsible for the difference.

Still, that conclusion goes beyond the scope of this article. Our goal has been to establish that a reliable gender difference in sex drive exists because existing opinion does not apparently subscribe to any such view. Once the existence of the difference is established, a logical next step for research is to begin to ascertain how much of that difference is attributable to biology and how much to socialization.

Concluding Remarks

All the evidence we have reviewed points toward the conclusion that men desire sex more than women. Although some of the findings were more methodologically rigorous than others, the unanimous convergence across all measures and findings increases confidence. We did not find a single study, on any of nearly a dozen different measures, that found women had a stronger sex drive than men. We think that the combined quantity, quality, diversity, and convergence of the evidence render the conclusion indisputable.

Turning to the causes of gender differences in sex drive, it would be premature to declare that a substantial part of the gender difference in sex drive is biologically innate, but we think the evidence is pointing in that direction (not least because of the apparent consistency of the difference). Biological processes, including the substantial gender difference in testosterone, have been implicated as determining sex drive. Although most findings pertain to modern America, a smattering of findings from other cultures continues to depict the male sex drive as stronger. Cultural influences have sought to stifle some aspects of female sexuality, but we found the difference in sex drive even in sexual spheres (such as marital sex) where culture has supported and encouraged female sexual desire, so stifling should not be rele-

vant. Personally we would like to believe that culture and socialization could be modified so as to make the female sex drive precisely the same as the male sex drive (because that would seemingly foster more harmonious relationships), but our review of the literature does not offer much encouragement to that view. Certainly anyone seeking to advocate that view of total cultural relativity faces a substantial burden of proof.

Regardless of whether the gender difference in sex drive is universal or is a product of modern Western culture, it is important for understanding close relationships and sexual behavior today. According to the principle of least interest (Waller & Hill, 1938/1951), social interactions will be shaped by the fact that the person who wants something more than the other is in a dependent position and will usually have to offer the other some inducements. Hence many male–female romantic interactions will take the form of the man offering the woman some resources (commitment, flattery, food, entertainment, money, companionship) to induce her to commence a sexual relationship.

Several eminent authors have recently discussed and deplored the relatively poor state of theorizing in the study of sexuality (see Weis, 1998; also DeLamater & Hyde, 1998). We think that the field's lack of consensus about gender differences in sex drive may have been a considerable obstacle to building theory. Indeed, some authors have hinted that there has been pressure to assume men and women have equal sexual motivations (e.g., Leigh, 1989). The assumption of equality would have steered theory in certain directions, such as forcing theorists to invoke ulterior (e.g., political) explanations for men's greater interest in pornography, prostitution, and the like. Even analyses of marriage may have had to regard men's sexual demands on their wives as rooted in nonsexual motives, to explain the differential sexual behavior without violating the (false) principle of equal sex drive. Although political factors can certainly influence sexual behavior, we suggest that the political motives are likely to interact with and develop around the basic gender difference in sexual motivation. More generally, the point that men want sex more than women is likely to become a focal issue in how most couples negotiate their sex lives, from first dates to losing virginity to multidecade marriages. An accurate, empirically grounded appreciation of the gender difference in sex drive should be a helpful part of the foundation for advancing theory about human sexuality and relationships.

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