Low-Investment Copulation: Sex Differences in Motivations and Emotional Reactions

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Samples of male (n = 113) and female (n = 175) college students were surveyed. Majorities of both sexes agreed with statements indicating that males' sexual attractiveness varied more than females' sexual attractiveness as a function of their status. Subjects who reported more sex partners and a greater aversion to sexual monogamy were slightly more likely to agree that they tested their partners to see how far they could push them. Interviews with highly sexually active females (n = 32) and males (n = 24) indicated that low-investment copulation and lack of control over the sexual access-investment ratio caused even women with very permissive attitudes and multiple sex partners to develop an aversion to low-investment copulation. Three levels were identified in this process. The techniques that women with multiple partners used to deal with their feelings are described. Females tested their partners for ability and willingness to invest. Males tested for opportunities to reduce investment and pursue other women. High status, for example athletic stardom, transformed males' sexual attractiveness to women and numbers of sex partners. Results were consistent with the view that the emotional-motivational mechanisms that moderate sexual arousal and attraction are sexually dimorphic.

KEY WORDS: Sexuality; Sex differences; Emotions; Evolution.

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Researchers guided by evolutionary theory explain sex differences in sexuality and mate selection criteria in terms of differential parental investment (Buss 1989a; Buss and Barnes 1986; Ellis and Symons 1990; Hill, Nocks, and Gardner 1987; Kenrick and Keeffe 1989, 1992; Kenrick, Sadalla, Groth, and Trost 1990; Sadalla, Kenrick, and Vershure 1987; Symons 1979, 1992; Symons and Ellis 1989; Townsend 1989; Townsend and Levy 1990a, 1990b; Trivers 1972). Although human males typically invest a great deal in their offspring, the sexes differ profoundly in their minimum possible parental investment. What might be a simple act of copulation for a male can result for the female in the medical risks of pregnancy and delivery, and the lifelong investment of motherhood (Symons 1979; Kenrick et al. 1990). Symons (1979) argued that this discrepancy in minimum possible investment caused, through natural selection, the mechanisms that mediate sexual arousal and mate evaluation to differ in men and women. As the human cortex and behavioral plasticity expanded during evolution, the number of maladaptive as well as adaptive behaviors that could be learned also increased. Consequently, because their reproductive risks and opportunities differed, males and females evolved complex, dimorphic, emotional-motivational mechanisms to recognize and look after their own interests. Without these mechanisms, people's sexual behavior would be prohibitively open to exploitation and random environmental variation. Males evolved the tendencies to become sexually aroused by visual stimuli and to spread investments among several females when circumstances permitted, because natural selection favored males who were attracted to a great variety of partners and who assessed these partners' acceptability for intercourse largely on the basis of visible physical attributes that served as cues to fertility, for example, muscle tone, complexion, facial and bodily proportions, and absence of wrinkles (Cunningham 1986; Ellis and Symons 1990; Hill et al. 1987; Kenrick and Keeffe 1992; Kenrick et al. 1990; Mathes, Brennan, Haugen and Rice 1985; Singh 1993; Symons 1979, 1987, 1992; Townsend 1989).

Because women's minimum possible parental investment is vastly greater than men's, selection favored a more selective process of mate evaluation in females, with more emphasis on partners' potential for parental investment—social dominance, prowess, nurturance—and less emphasis on physical attributes that serve as cues to fertility (Buss 1989a; Sadalla et al. 1987; Symons 1979). Women's emotional mechanisms should therefore motivate them to seek out and detect partners' ability and willingness to invest, to evaluate the quality of investment, and to espy and counteract shirking and false advertising. The two studies described below utilized a combination of quantitative and qualitative methods to explore sex differences in the determinants of sexual attractiveness, tendencies to test partners for sexual access and quality of investment, and emotional reactions to sexual intercourse. For convenience, hypotheses appear in the "Results" section.
STUDY 1

The principal goals of Study 1 were (1) to survey student beliefs concerning the determinants of male and female attractiveness in a college environment; (2) to assess subjects' tendencies to test their partners; and (3) to examine the correlations between such testing and polygamous tendencies. Whether students hold a certain belief or not does not make it true or false, because many adaptive mechanisms and their behavioral products may operate at an unconscious level (Daly and Wilson 1983; Nesse and Lloyd 1992; Symons 1979; Trivers 1985). The beliefs themselves, however, constitute important empirical data regardless of their accuracy.

Sample and Procedure

Subjects consisted of female \( n = 175 \) and male \( n = 113 \) students in a general requirement, upper-division anthropology course. Participants completed the anonymous surveys in same-sex groups of 10 to 20. Participants were informed that the investigators were interested in the types of people different individuals would interact with in certain situations. The questions analyzed below were embedded in a 102-item questionnaire.

RESULTS

Context and Sexual Attractiveness

Hypothesis I. If males judge sexual attractiveness primarily on the basis of physical attributes that act as fertility cues, for example, youth, health, and bodily and facial proportions, males should show high agreement when rating the sexual attractiveness of females, as they did in Cunningham's study (1986). In comparison, female subjects should show greater variability in their ratings of males' sexual attractiveness because they will be more influenced by factors like the male's status and dominance in local hierarchies, and perceived personality and willingness to invest in them (Jankowiak, Hill, and Donovan 1992; Townsend 1993).

Prediction I. Distinctly different social groups exist on high school and college campuses. Males' sexual attractiveness varies as a function of status within these groups more than does females' sexual attractiveness.

The results in Table 1 indicate that most of the males and females surveyed affirmed that the following social types existed in their high school or college environments and were generally recognizable by their costumes: heavy metals, druggies, nerds, preppies, jocks. About three-quarters of the males and females agreed that females considered the male leaders of these groups to be the most attractive. About 60 percent of males and females agreed that the females in one
Table I. College Students' Opinions Concerning Sexual Attractiveness—By Sex

<table>
<thead>
<tr>
<th>Percentage of Males</th>
<th>Percentage of Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>Undecided</td>
</tr>
</tbody>
</table>

1. In most cases the guys that were the most attractive in high school were not among the most attractive when they got to college because the girls then tended to be attracted to the guys that were juniors and seniors.  
56 32 12 62 23 15

2. There are different groups in high school and college that do not really mix (heavy metals, jocks, preppies, druggies, nerds).  
91 4 4 87 6 7

3. In these different groups, the guys whom the girls consider the most attractive tend to be the leaders of these groups.  
76 16 8 75 14 11

4. In general, the girls in one group (the preppies, jocks) do not find the leading guys in another group (the druggies, nerds) attractive.  
58 25 17 58 13 29

5. In high school and college, everyone pretty much agreed on who the prettiest girls were, but girls in different groups did not agree on who the most attractive guys were.  
64 25 11 57 20 23

6. One of the reasons I would think twice about getting married is because I find the idea of having sex with only one person for the rest of my life depressing.  
25 17 58 9 9 82

7. I don't plan to be completely faithful forever to my wife/husband.  
9 15 76 2 4 94

8. Number of sex partners  
<table>
<thead>
<tr>
<th>Percentage of Males</th>
<th>Percentage of Females</th>
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<tr>
<td>1-4</td>
<td>37</td>
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<tr>
<td>5-11</td>
<td>31</td>
</tr>
<tr>
<td>12+</td>
<td>24</td>
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9. Deliberately had sex without emotional involvement  
| yes | 73 | 36 |
| no | 27 | 63 |

N = 175 females and 113 males. Questions were answered on 5-point, Likert-type scales: 1 = strongly agree; 2 = agree; 3 = undecided; 4 = disagree; 5 = strongly disagree.

group did not consider the leading males in other groups attractive, but a greater percentage of females than males disagreed with this statement, $\chi^2 = 10.43, df = 4, p < .03$. Males were more likely than females to agree that: "everyone pretty
much agreed on who the prettiest girls were, but girls in different groups did not agree on who the most attractive guys were; \( \chi^2 = 6.23, df = 2, p < .05 \). A little over half of the males and females agreed that males' attractiveness dropped when they entered college, only about ten percent disagreed, and the rest were unsure.

**Hypothesis 2.** If women are typically choosier than males and they select and reject partners largely on the basis of investment, they should develop methods to evaluate quality of investment, and to detect shirking, false advertising, and lack of prowess. In comparison, males should develop countercatchs to increase the number of females inseminated and to minimize investment per copulation and the possibility of cuckoldry (Daly and Wilson 1983; Symons 1979, 1987). A method used by both sexes is *testing*. Testing is behaving in a way that is likely to elicit from a partner evidence of a particular trait, for example, jealousy, nurturance, indulgence, or dominance.

Both sexes test to see what they can get from their partners and what they can get away with. In Study 1 we wanted to establish whether college students were aware they tested their partners and whether testing behavior covaried with gender or polygamous tendencies. Sex differences in goals and types of testing will be explored in Study 2.

To measure subjects' tendency to test partners, subjects were asked, "I sometimes test my girl/boyfriend to see how far I can push her/him before she/he draws the line." Males and females were equally likely to endorse the testing question: male \( M = 2.92 \), female \( M = 2.97 \) (1 = strongly agree; 3 = undecided; 5 = strongly disagree). Subjects' polygamy and aversion to monogamy were measured with Questions 6-9 in Table 1. Males were more likely than females to have adulterous plans and an aversion to monogamy (Questions 6, 7), respectively, \( \chi^2 = 27.55, \chi^2 = 24.61, df = 4, p < .0001 \). Males also claimed to have had more sex partners than females did, \( \chi^2 = 35.98, df = 8, p < .0001 \), and males were more likely to have deliberately had intercourse without emotional involvement, \( \chi^2 = 37.22, df = 1, p < .0001 \) (Questions 8, 9). Questions 6-9 were aggregated and entitled, "Polygamy" (standardized variables, Cronbach's alpha = .66). The testing question was subjected to regression analysis, with Polygamy and Sex of Subject as independent variables (Sex of Subject was dummy coded, male = 0; female = 1). Sex of Subject did not have a significant effect (standardized estimates), \( \beta = -.05, t < 1, \text{ns} \). Polygamy had a significant effect, \( \beta = .26, t = 2.90, p < .004 \). The Sex of Subject \( \times \) Polygamy interaction effect was marginal, \( \beta = -.15, t = -1.80, p < .07 \).

The following question also measured subjects' tendency to test: "I like a girl/guy who treats me well, but if she/he's too nice, I lose respect for her/him" (male \( M = 3.20 \); female \( M = 3.28 \)). A regression analysis showed that Sex of Subject did not have a significant effect, \( \beta = -.05, t < 1, \text{ns} \). Polygamy was significant, \( \beta = .28, t = 3.13, p < .002 \). The Sex of Subject \( \times \) Polygamy interaction showed a possible trend, \( \beta = -.12, t = 1.49, p < .13 \). Simple correlations were computed between the four items comprising the Polygamy factor and the two testing questions. For males, the correlations ranged from .12 to .19. For
... females. The correlations ranged from -.05 to .03, indicating that the individual associations between the Polygamy items and the testing questions were not strong for males, and might be slightly weaker for females.

**STUDY 2**

Consistent with the theoretical writings of Darwin (1872/1955), contemporary evolutionary psychologists assert that different emotions are accompanied by unique patterns of physiological activity. Emotions are viewed as domain-specific adaptations designed by natural selection to solve a certain category of regulatory problem (Buss 1988, 1989a, 1989b, 1992; Buss, Larsen, Westen, and Semmelroth 1992; Daly and Wilson 1988; Davidson, Ekman, Saron, Senulis, and Friesen 1990; Ekman, Levenson, and Friesen 1983; Nesse 1990; Symons 1979, 1989; Tooby and Cosmides 1992). Although emotional mechanisms are modifiable by experience, evolutionary researchers propose that certain cognitive-emotional links are easier to forge than others; consequently, some emotional reactions to particular events are universal or nearly universal (Brown 1991; Buss 1989b; Daly and Wilson 1988; Symons 1979). This position is similar to earlier anthropologists’ concept of a “developed human nature.” Although cultural mores may be able to “make anything right,” given human propensities and certain universal needs, mores have an easier time making some things right than others (Redfield 1957). Male sexual jealousy illustrates this principle. In some societies, severe sanctions and punishments serve to control and suppress the violent reactions provoked by male sexual jealousy, but the emotions apparently occur in many individuals nevertheless, and some men express them violently despite the sanctions and punishments (Daly, Wilson, and Weghorst 1982; Daly and Wilson 1988). Because the emotional mechanisms that mediate sexuality differ in males and females, certain critical experiences produce different and even opposite effects on males and females (Buss et al. 1992; Daly et al. 1982; Symons 1979; Symons and Ellis 1989; Tooby and Cosmides 1992; Townsend 1987, 1992).

In contrast to the view of emotions as domain-specific adaptations, many cognitive theorists assert that different emotions are characterized by the same undifferentiated autonomic arousal, and the specific emotion experienced is determined by the cognitive process that labels the emotion according to rules that have been acquired in socialization. In this view, cultural “feeling rules” can essentially determine the subjective feelings one experiences (DeLamater 1991; Mandler 1984; Scheff 1985; compare Daly and Wilson 1988; Davidson et al. 1990; Tooby and Cosmides 1992). A third view holds that emotions are simply attitudes and beliefs, or parts of “scripts,” that are learned through socialization (Blumstein and Schwartz 1990; Delamater 1991; Simon and Gagnon 1986). This perspective assumes a “tabula rasa” view of the brain regarding emotions and posits that the links between specific events and emotions are arbitrary and totally determined by one’s culture. This social constructionist perspective is the most diametrically opposed to an evolutionary/adaptationist approach (compare Scheff 1985; Simon and Gagnon 1986; Tooby and Cosmides 1992).
Sex differences in sexual behavior and attitudes have declined in Western societies since the Kinsey studies (Alzate 1984; Blumstein and Schwartz 1983; Clement Schmidt, and Kruse 1984; Kinsey et al. 1953). But sex differences remain strong in masturbation rates, timing and causes of first arousal, motivations for coitus, attraction to dominance, and the tendency to dissociate coitus from emotional involvement (Carroll, Volk, and Hyde 1986; Clement et al. 1984; Hatfield et al. 1989; Knuth, Boyd, and Singer 1988; Sadalla et al. 1987; Townsend 1987, 1989; Useche, Villegas, and Alzate 1990; Wilson 1981, 1987). A common social science explanation of women's tendency to link love and coitus is that cultural mores dictate that females should be in love before they have sex, and females therefore try to ensure they are in love and that their partner loves them before, or at least during, a sexual affair (Gagnon and Simon 1973; Hatfield et al. 1989; Hill, Rubin, and Peplau 1979; Roche 1986; Simon and Gagnon 1986; compare Ellis and Symons 1990; Knuth et al. 1988; Tooby and Cosmides 1992; Townsend 1987, 1995; Useche et al. 1990; Wilson 1987). Admittedly, many women in this culture are exposed to romantic ideology extolling the raptures of romantic love, and many no doubt absorb this ideology (Ellis and Symons 1990). Women evaluate cues to potential for investment as part of their evaluation of mate attractiveness, and much of this evaluation occurs prior to coitus as well as after (Buss 1989a; Kenrick and Keefe 1992; Townsend 1989; Townsend and Levy 1990a, 1990b). Hence, for many women falling in and out of love represents more “rational” decisions than romantic ideology would indicate (Goode 1959; Kanin, Davidson, and Scheck 1970; Townsend 1987, 1989, 1992; Weinrich 1988). But an adaptive mechanism that evaluated investment solely on the basis of the more cognitive, general appraisal that occurs during courtship could be maladaptive because it could be undermined by misleading information, or for other reasons fail to function when, in fact, female reproductive risks and opportunities were involved. To be maximally effective, such an emotional mechanism should be “closer to the genes” (Symons 1979; Wilson 1975), and therefore more directly tied to the act that produces female reproductive risks and opportunities, namely, vaginal penetration.

Buss (1989b) argues that the negative emotions of anger and upset appear to be proximate mechanisms by which men and women are alerted to strategic interference. These emotions draw attention to certain classes of events and motivate action to eliminate those interfering events (Buss 1989b; Buss and Schmitt 1993). Consistent with this perspective, Townsend (1987) found that women medical students experienced intensely negative emotional reactions when they attempted to maintain sexual relationships that involved insufficient emotional investments and marital potential. Endorsement of restrictive sexual morality did not predict these reactions. Rather, what appeared crucial for the activation of such intense anxiety and remorse in sexually liberal women was a discrepancy between the woman's desire for a specific male's emotional commitment and his actual commitment (i.e., his willingness to invest). This discrepancy produced negative feelings of vulnerability, of “being used,” and that “something was wrong.” These feelings seemed to act as an emotional “alarm” that warned the women
that their interests were being thwarted. These emotions were so strong that the women's attempts to disregard them failed, and in every case they were impelled to change their tactics: they demanded more investment-commitment, and if it was not forthcoming, they terminated the relationship. In contrast to their female peers, similar experiences led the male medical students to the opposite conclusion: they should seek and enjoy more transitory relationships in the future because such a course would be less damaging to their mental balance and career aspirations than would more involved relationships.

Simpson and Gangestad (1991a, 1991b, 1992) identified a population of undergraduate females that engage in far more low-investment copulation than the average male and apparently do so voluntarily. These authors observe that intrasexual variation exceeds intersexual variation for many types of sexual behavior, and they propose that intrasexual genetic variation underlies this overlap in behavior. Gangestad and Simpson (1990) classify women who score below the median on their Sociosexual Orientation Inventory (SOI) as "restricted," and women who score above the median as "unrestricted." Unrestricted women require less investment of affection and resources from their partners as a prerequisite for coitus, provided the men meet their standards for physical attractiveness and/or status-dominance. Consequently, unrestricted women require shorter periods for mate evaluation, tend to have more sexual partners, and have shorter-term relationships than do restricted females.

Survey data from a clustered probability sample of 1314 never-married, 20-29-year-old women revealed that with increasing sexual experience, the periods of abstinence and the time spent between sexual relationships declined; these dynamics produced an ever-increasing rate of sex partners (Tanfer and Schoorl 1992). The authors caution that many of these women may desire more durable monogamous relationships, but as desires and needs change, or relationships do not "lead to somewhere," they move on to new partners (1992, pp. 64-65).

The purpose of Study 2 was to use evolutionary theory to explore the following questions in samples of males and females with histories of multiple low-investment copulations and thus high SOI scores. Does vaginal intercourse, in and of itself, produce emotions that serve to evaluate quality of investment? What are the motivations and emotional reactions of women who engage in low-investment copulation with multiple partners? Can these women totally dissociate sexual pleasure from a need for investment (e.g., emotional bonding, displays of affection, ideas of future commitment)? How do they compare to their male counterparts in this regard? To help to answer these questions, we included Simpson and Gangestad's (1991a, 1991b, 1992) Sociosexual Orientation Inventory (SOI) in our questionnaire. A second goal of Study 2 was to extend Study 1's findings on testing and on status and sexual attractiveness in samples of males and females with histories of multiple sex partners. For clarity and brevity, hypotheses appear in the Results section.
METHOD

The SOI consists of seven questions: number of sex partners in the previous year, number of one-night stands, number of parents foreseen in the next five years, frequency of sexual fantasies about people other than the current dating partner, and three questions answered on 9-point Likert scales, "Sex without love is OK," "I can imagine myself being comfortable and enjoying 'casual' sex with different partners," and "I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex with her/him." The SOI correlates highly with subjects' total number of sex partners and numerous other measures of sexuality, both behavioral and attitudinal (Simpson and Gangestad 1991b, 1992).

Sample

Students in an upper-division anthropology class (Sample 1) were asked whether they would be willing to be interviewed in person by a same-sex research assistant concerning their marital goals, and dating and sexual experience. Students who volunteered were subsequently telephoned and informed that we only wanted to interview people who were "quite sexually active." If respondents asked what "quite sexually active" meant, they were told we were interested in people who had had sex with several partners. Participants were also requested to ask any friends or roommates who fit that criterion whether they would be willing to be interviewed. Initial opportunity samples of 35 sexually active females and 26 sexually active males were identified. Three of the original 35 women, and two of the 26 men were never interviewed because of logistics and time constraints; there was nothing systematic about these losses. The mean SOI score of the 32 females was 83.50, \(SD = 36.25\), range 43-186. The female mean SOI score in the study detailing the development of the SOI was 38.90, \(SD = 26.90\) (Simpson and Gangestad, 1991b). Thus, all of the current sample's female scores exceeded those subjects' mean score and presumably would be classified as exhibiting an "unrestricted" sociosexual orientation by the authors' criterion (they used the median score to classify the sample "restricted" and "unrestricted"). The mean SOI score of the 24 males was 173.83, \(SD = 96.71\); their range, 88-464.

Procedure

The research assistants made appointments for volunteers by telephone and interviewed them in their own or the interviewer's apartment. Each interview lasted from one to four hours. Two female research assistants conducted interviews with women, and two male assistants interviewed the men. These interviews included some open-ended as well as forced-choice questions and allowed the respondents to describe the vicissitudes of their love lives in their own words.
Coding categories for Questions 1–5 in Table 2 were derived from theoretical literature (Buss 1989a, 1989b; Symons 1979) and our own prior and current investigations (Townsend 1987, 1995; Townsend and Wasserman 1994). One female and one male coder who were unaware of the hypotheses being tested coded all of the interviews. Coders were instructed to assign subjects' answers to the category they judged most appropriate. Answers that did not easily fit in any one of the given categories were assigned to an “other” category. Answers with less than an expected frequency of five were omitted from analysis. Coders had to exercise judgment in interpreting some answers. For example, males' responses to Question 3 were placed in category 3 if they reported that they sometimes tested partners for jealousy (usually partners whom they were willing to date), but they also attempted to minimize investment and copulate with some women whom they did not find attractive enough to date. The following excerpt from an interview with a male undergraduate was assigned to category 3 for both Questions 3 and 4:

They were willing to put out and there was nobody that I liked who was available. We'd have sex about four times a week, which was about right because I couldn't stand seeing too much of them. These girls were really into me, so I could have it whenever I wanted. I'd be drunk in a bar and see one of them, and then hook up. I didn't want to see any of these girls too often, and I was always dating other people. If a girl is a loser, too clingy or something, or doesn't want to put out, I really don't want anything to do with her.

The following interviewee was assigned to category 2 for Question 1 and to category 3 for Question 4:

I did this [had sex with partners I did not like] because it was convenient. They were really into me, and it made me feel really guilty, which is why it was hard to stay detached emotionally. We'd have sex a couple of times a week. I would have preferred less, but they were wanting it more, thinking it was what I wanted. The whole thing didn't feel right. If a woman wanted just sex, it would be cool, but they always get involved. That's why I usually only sleep with girls that I really like. I really hate hurting girls. It makes me feel guilty.

The two raters showed acceptable consistency in their ratings. When the two raters disagreed, the SAS program randomly assigned the answer to the category chosen by either Rater A or Rater B. Cohen's Kappas for the five questions were, respectively: .80, .85, .79, .77, .92 (Cohen 1960). A simplified method of computing Cohen's Kappa was used (Kvalseth 1989).

RESULTS

Hypothesis 3. Emotional reactions are the proximate mechanisms by which males and females are alerted to strategic interference (Buss 1989b; Buss and Schmitt 1993). A primary human female strategy is to trade sexual access for investment, whereas men tend to trade investment for sexual access (Symons 1977; Townsend 1987, 1989, 1993; Townsend and Roberts 1993). Females' emotional
reactions to coitus therefore alert them to deficiencies in investment and motivate them to seek superior investment; similar experiences have significantly different effects on males.

**Prediction 2.** Even when women feel they do not want to become emotionally involved with a person, sexual intercourse will make them feel vulnerable and anxious about partners' willingness to invest. Multiple-partner males will have a significantly lower incidence of these thoughts than multiple-partner females.

**Prediction 3.** Compared to men, women will be more likely to test their partners for displays of traits that indicate ability to invest, such as dominance and prowess, and traits that indicate a willingness to invest, such as generosity, jealousy, affection, and nurturance. Men will be more likely than women to test for the possibility of investing less while maintaining sexual access (e.g., test for the freedom to pursue sexual opportunities with other women).

The results in Table 2 support Hypothesis 3 and Predictions 2 and 3. Question 1: Women were more likely than men to worry about how their partners felt about them. Men were more likely to worry only if they liked the person, and more likely to feel guilty about their partners' reactions to low-investment copulation, $\chi^2 = 16.50, df = 2$, Cramer's $V = .56, p < .0001$. Question 2: Men were more likely than women to just want sex and not worry about the potential for a continuing relationship, $\chi^2 = 27.84, df = 2, V = .70, p < .0001$. Question 3: Both males and females tested for jealousy, but women were more likely to test for dominance and signs of affection; males were more likely to test their partners for the minimum they could invest and still enjoy sexual access, $\chi^2 = 22.33, df = 2, V = .67, p < .0001$. Question 4: Women felt they needed to control their own feelings and dependency and those of their partners; men were more likely to feel the need to maintain sexual access while preserving some freedom from their partners' dependency on them, $\chi^2 = 35.05, df = 2, V = .79, p < .0001$. Question 5: Women were less likely than men to have sex when they were upset with their partners, $\chi^2 = 16.45, df = 2, V = .54, p < .0001$. In addition, the following more qualitative analysis lends convergent validity.

**Multiple-Partner Women**

Three levels were identified in multiple-partner females' sensitivity to low-investment copulation. Because the samples were cross-sectional, we cannot be sure that all Level 1 females will go through the same sequence and be affected in the same way, but we are sure that all Level 3 females reported that they had been through Levels 1 and 2. Level 1 represented a sexual "coming out," in which the subject tested her attractiveness and experimented with her sexual power, its effects, and her own ability to do without investment. In some cases this activity was explicitly viewed as testing attractiveness and as "competition between friends to see who could get the most attractive guys." As one subject remarked, "it's the ultimate ego boost to have a bunch of guys come up to you and want to be
Table 2. Oral Interview Responses of Highly Sexually Active College Students—By Sex

<table>
<thead>
<tr>
<th>Questions</th>
<th>Males</th>
<th>Females</th>
</tr>
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<tbody>
<tr>
<td>1. Even if you are not emotionally involved with a guy/girl and don't want to be emotionally involved, if you have sex with him/her, how does it make you feel? (1) Wonder if partner cares at all, how partner feels about me; these feelings are difficult to control. (2) Difficult only if I like the person, or, difficult because partner made me feel guilty. (3) Indifferent.</td>
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<td>2. When you first have sex with someone, do thoughts cross your mind like: (1) Is sex all partner was after; will partner call; will partner dump me in the morning? (2) Will this relationship last? (3) Usually don't want it to last; just want sex.</td>
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<tr>
<td>3. Do you ever test your partner to see where he/she stands, or how far you can push him/her before she/he draws the line? If so, what is it you're looking for when you do this? (1) Jealousy and partner's ability to be dominant. (2) Nurturance, devotion, affection, consideration. (3) Test some partners for jealousy and with some partners minimize investment while maintaining sexual access.</td>
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<tr>
<td>4. Do you feel like you need an element of control in your relationships? If so, what specifically do you feel you need to control? (1) How partner feels about me (e.g., partner's willingness to spend nonsexual time with subject) and/or my own emotions and dependency on partner. (2) Sexual access. (3) Partners' dependency on me because I need my sexual freedom and/or because their dependency makes me feel guilty.</td>
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<tr>
<td>5. When you are upset with your partner, will you still have sex with him/her if she/he wants it? (1) No. (2) Usually but not sometimes, if necessary to maintain relationship. (3) Yes.</td>
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Note. N = 32 females and 24 males. Answers with expected frequencies of less than five were omitted from the x² analyses.

with you, even if it is just for one night." These women had not yet experienced a sharp discrepancy between investment desired and investment received. Six women appeared to be in this level.

The 18 women in Level 2 were more experienced in low-investment copulation. Managing their emotions and the desired level of investment was perceived as a problem. This perception resulted in tactics to control (or at least give the subject the feeling of controlling) the balance between the degree of sexual access they allowed and the amount of investment they received from their partners. Some of these tactics were as follows: eliminate sex of limit sexual access to avoid experiencing discrepancy between desired investment and investment offered; date others; keep a faithful, reliable investor in reserve for reassurance; suppress emotions, considerations of partner.

**Dichotomy:**
they desired in relation with the decisions; however, few one woman of her boyfriend's her constant woman (SOI) sex with him.

**Denial:** Me while reacting who strongly that she didn't knowledged subject who's also said she "I don't want."

**Rationalization:** completely divorcing they found the women's society's fault these women's reactions to this arbitrary society what they were getting.
Sex

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Dichotomy: Six Level 2 women explicitly dichotomized between men from whom they desired investment and those from whom they did not. Low-investment copulation with the latter group was more acceptable because the women had made the decision (or felt they had) that it was “just for sex.” From the former group, however, females required substantial courtship and investment. For example, one woman (SOI = 106) had two one-night stands with no regrets, but made her boyfriend wait two months before having intercourse—meanwhile testing him constantly by canceling dates and making him do all the pursuing. Another woman (SOI = 103) felt that a man owed her attention and respect if she had sex with him. She did not regret her four one-night stands, however, because they were acts of revenge meant to punish treacherous former partners.

Denial. Most of the Level 2 women maintained extremely permissive attitudes while reacting negatively to low-investment copulation. For example, one woman who strongly agreed with the two SOI questions, “Sex without love is OK,” and that she did not need emotional attachment to fully enjoy sex with men, acknowledged she worried during and after intercourse whether guys would want to see her again or were just after sex (SOI = 82). When asked why she worried, she answered, “Because guys are cocksuckers and they can’t be trusted.” Another subject who strongly agreed with the same two SOI questions and who dichotomized between casual and serious relationships, admitted that she tended to get emotionally attached even when she went for a one-night stand or purely sexual relationships (SOI = 91). She reported, however, “I try not to let this get in the way of a sexual relationship, and try to hold my feelings back to the best of my ability.” Another woman (SOI = 88) said one-night stands were totally acceptable but was “frustrated” that she could not “even find a formal date” (i.e., an acceptable partner for an event signaling high-quality investment). This subject also said she did not trust men and did not engage in regular casual sex because, “I don’t want to get hurt.”

Rationalization. Two women in Level 2 acknowledged that they could not completely divorce sexual intercourse from emotional involvement. They both said they found this frustrating and envied men in this regard, but society had socialized women this way for so long that they couldn’t help themselves. This “it’s society’s fault” explanation may function to rationalize the discrepancy between these women’s permissive attitudes and sexual behavior and their emotional reactions to this behavior. Believing that their reactions are merely the products of arbitrary social conditioning, they can avoid confronting the discrepancy between what their emotions are warning them they should have and what they are actually getting. All of the Level 2 women engaged in some of these tactics and combinations thereof.
The eight women in Level 3 had engaged in multiple low-investment copulations in the past, but had made a clear decision to eschew them in the future. Three events were identified that led to this decision. The first event was the realization that they could not always control the amount of investment they received sufficiently to allow them to control their emotional reactions: being intoxicated and “waking up with strange guys in strange places;” not remembering having sex but figuring “it must have happened because I woke up naked;” sleeping with guys “I don’t really know at all;” subsequently running into guys they had slept with, and the guys “acted like they didn’t even know” them. These were “scary” events and made the subjects feel “slutty” and “used” (examples from four subjects, SOI M = 128). Several subjects from all three levels said that they wanted men to want to see them again whether they wanted to get involved with those particular men or not. As one woman reported (SOI = 99), she wanted “to control whether a relationship continues or whether it stops . . . to control its destiny.”

A second determinant of Level 3 women’s decisions to eschew low-investment copulation was that some women began to realize that coitus itself produced feelings of bonding and vulnerability, and these feelings were difficult to suppress. One subject (SOI = 91) seemed to be moving from a Level 2 consciousness toward Level 3, but was still engaging in rationalization and denial. She expressed extremely permissive attitudes, saying that sex was “no big deal” and was the same whether it was in a one-night stand or with a person she loved, but she admitted she had anxiety/vulnerability thoughts after intercourse, particularly if she liked the guy, because she had found “from experience that a lot of times I thought I was starting a relationship, the guy was only after sex.” Now she has anxiety/vulnerability thoughts “every time I have sex with a guy.” She said that there is a link between two people after vaginal intercourse that does not exist after just petting; however, “this is just a physical link and not necessarily emotional,” but if she really liked the guy, she might “interpret this link to be emotional as well, because we’ve shared an intimate moment.” When asked how often this link occurs, she replied, “most of the time.”

Another subject (SOI = 96) seemed to be further along in her realization that coitus produces feelings of bonding and desire for investment. She strongly agreed that “Sex without love is OK,” and said “When you first have sex, it is a big deal, but once you’ve lost your virginity, it gradually becomes less important to be in love with the guy. The more you have sex, the less of a big deal it becomes.” After initial sexual encounters, however, she does have anxiety/vulnerability thoughts, and she does have marital thoughts, sometimes even before she has sex with someone. She says that once she sleeps with a guy, she feels that there is “a link between the two of us . . . we’ve shared our bodies and left ourselves vulnerable to each other . . . I think of the guy as being mine in a way, even though I know we don’t have a relationship.” She explained that she gets attached to guys very easily because she is “very emotional”; she thought this was “natural for all girls.” She reports that she was raised to have sex only when she was in love with someone and married to them. She thinks that this is partly why she always gets attached to a guy after she has had sex with him:
"It's like I can justify my actions by thinking, even if I wasn't involved with the guy before I had sex with him, it's okay 'cause I am now . . . [in this way] I don't have to feel that I've completely gone against the morals I was raised with." Despite her liberal attitudes and statements, this subject definitely controls sexual access with her current boyfriend and exchanges it for investment: She does not have sex with her partner when she is mad at him because it would be "belittling my feelings" and would "give him control over me because I'm letting him do whatever he wants."

Testing for Investment Potential. About half of the women said they flirted and provoked jealousy to see how much their partners cared and to increase their partners' interest and willingness to invest. Most of the women in the oral interviews said that they liked a "challenge," a guy that was "hard to get" but not impossible. When guys are too easy to "get," the women become "bored because it takes all the fun out of it." When queried about what "getting" a guy meant, female subjects gave various examples of willingness to invest: take her to nice places, call frequently, be affectionate, willing to spend quality, nonsexual time with her, treat her with respect, not pursue other women. In this collegiate subculture, a vernacular term for a man who is completely willing to court a female and do anything she wants is whipped, which is an abbreviation of the phrase, pussy-whipped. This term seems to be as popular among women as among men, at least in this subculture. Other terms for men who too readily offer signs of willingness to invest are nerd, dweeb, wimp, geek, dork, and jerk. One woman (SOI = 96) said that she needed a "challenge." If a guy is "too nice" and "sucks up" to her too much, it gives her an "inferiority complex because a guy who would do that may not be as great as I think he is." Another subject (SOI = 111) reported that if a guy agrees with everything she says, she tries to provoke him "just to see if I can get an argument out of him." She also brings up "topics he knows more about" than she does, so that "he has to take the conversation away" from her. For heterosexual women, dominance is an essential component of sexual attractiveness; the type of testing and evaluation of male prowess and dominance described in the interviews thus appears to be a pervasive element in heterosexual relationships (Blumstein and Schwartz 1983; Sadalla et al. 1987; Townsend 1987, 1989).

Multiple-Partner Men

Women interviewees considered men "challenges" when it was difficult to induce those men to be sexually monogamous and/or to invest heavily and exclusively in them. Consequently, men who have sexual access to several women and therefore do not have to invest heavily in any one woman are often seen as challenges. The males with the greatest numbers of partners were all star athletes, leaders in their fraternities, or otherwise had high profiles. The stars of the large spectator sports, basketball and football, all had had over 100 sex partners. The stars of sports like rugby and lacrosse had all engaged in over 40 one-night stands.
but admitted that football and basketball stars had much greater access to women than they did, especially in a good season when football and basketball games were on network television. Many of the one-time encounters involved fellatio rather than vaginal penetration and were with "groupies." Multiple-partner males’ statements supported Hypothesis I: Men’s attractiveness to women depended on their status being high and known (Symons 1979). Consequently, most of their low-investment copulations were with female students: Campus was where they had status, so that was where they had the greatest access to women. For example, three football players who were certain to be drafted into NFL teams said that their attractiveness to women all depended on "status" and "environment." At some frat parties, the "women are into the frat boys there and not into football players, so you have to be in the right environment, where the women are into football players." One campus bar in particular is known as a football hangout, and these men made many of their "hook ups" there. These men explained that when they attend functions in other cities or states where they are not known, they are "scrubs," but when a star professional athlete or network sportscaster introduced them and confirmed their status, women suddenly became available. One of the players said that he took off his helmet as often as possible during games so that he would be recognized off the field by fans, particularly women. The male athletes also acknowledged that they usually wore their varsity jackets to broadcast their status when they went out partying.

Eight nonathletes said a primary motivation for joining fraternities was access to women. They stated that their access was near zero but was transformed virtually overnight when they became upperclassmen and prominent in their fraternities. They also said that they tended to "hook up" with younger girls, that is, freshmen and sophomores, because they were "easier." Thus, the benefits of hypergyny for higher status males were not lost on these men (Buss 1989a; Townsend 1989). Some of the men felt guilt about their activities, and this reduced their number of partners from what it would otherwise have been. This guilt was inspired by their partners' reactions to low-investment copulations rather than by their own reactions: Really hurting a woman by "just screwing and dumping her" made some of the men "feel like shit."

The male interviews confirmed a point that had emerged in the women’s interviews. Multiple-partner women tend to specialize: football groupies were not usually interested in members of punk rock bands; basketball groupies were not interested in wrestlers; counterculture types typically despised athletes and fraternity men. None of these women referred to themselves as "groupies;" if they commented at all on their specialization, the women would use phrases like, "I’ve ‘dated’ or ‘gone out with’ some of the guys on the team." Status in a particular hierarchy rather than specific physical attributes determined these men’s attractiveness; for example, some male counterculture and punk-rock celebrities have scrofulous bodies, yet they have their groupies.

Most of the men said that they planned to "settle down" some day and get married, but none claimed that he would remain totally faithful. About a third of the men had girlfriends now and discreetly cheated on them. The easy access
to sex “with no strings attached” overwhelmed their loyalty and prudence. Several star athletes reported that they were “afraid” of women because women often wanted more than they claimed; “they want to control your time, your social life, and your sex life.” In the past, the men said they had led women on, that is, promised or implied more investment than they were willing to make (Daly and Wilson 1983). Now, they made it very clear “up front” that it was a simple copulation with no further contact. Even so, these men said they had “cooled it” compared to their activities in the past because of the risks of allegations of date rape, paternity, other entanglements, and disease. These men each had 10 to 20 women whom they could call any time they wanted sex and companionship, and they remained open to novel partners who appeared safe and were particularly exciting. They thought this tactic was both safer and more convenient than the random, multiple “hook ups” in which they used to engage. The men with the greatest numbers of partners did not boast and in fact were reluctant to offer details because of the opprobrium surrounding male “exploitation” of women, and their awareness of how such information could damage their careers and reputations.

The three football stars were African American and acknowledged that most of the girls they slept with were white. They said that this makes the “black girls around campus angry” but the men figured those women are just jealous. One player recalled a black woman upbraiding him for “sleeping with all those white girls.” He asked her if she would go to bed with him and she said “no.” He said “Then shut up!” The men said that they did not discriminate, but “decent-looking” black women were not nearly as sexually available as their white counterparts. The men affirmed that they did not think that these white women would ever have sex with African American men who did not have extremely high status. For their part, these men said they would never marry a white woman and would probably not have a serious dating relationship with one.

Testing

The men’s responses to the testing questions were consistent with Prediction 3 (see Table 2). About half the men said that they tested for jealousy and how much their partners cared for them, but this was only with someone they were really interested in (i.e., someone in whom they might be willing to invest). Most of the men also said they wanted their girlfriends to be challenges and “to be able to stand up” to them, but what the men meant by this was a mirror image of the women’s definition. A woman who did not demand investment would get neither “respect” nor investment. The men indicated that they would court and invest as little as was necessary but would still copulate with women whom they did not respect and did not even like, “just to get laid” or “to get their rocks off,” provided that the women were sufficiently physically attractive. Most of the male interviewees had done this numerous times in their single sexual encounters (one-night stands). Thus, a woman’s being sensible, having backbone, and demanding investment were prerequisites for males’ willingness to invest,
but these qualities did not determine females' sexual attractiveness. In comparison, signs of dominance, prowess, and competitiveness seemed to be essential components of men's sexual attractiveness (i.e., coital acceptability) when women judged partners (Blumstein and Schwartz 1983; Sadalla et al. 1987; Townsend 1987, 1989; Townsend and Roberts 1993).

GENERAL DISCUSSION

The majority of males and females endorsed Questions 1-5 in Table 1 concerning sex differences in the determinants of sexual attractiveness and males' demonstration on entering high school or college. Only small percentages disagreed with these statements. From 6% to 32% were undecided on these questions. These results were consistent with Hypothesis 1. More research is needed, however, to ascertain how prevalent these phenomena actually are (as opposed to popular beliefs), how they operate, and why sex differences in beliefs about variation and the determinants of sexual attractiveness occurred (Table 1, Questions 4 and 5).

The current finding also supported Prediction 3: multiple-partner females tended to test for willingness and ability to invest, whereas multiple-partner males tended to test for opportunities to reduce investments while still maintaining sexual access.

Buss and Schmitt (1993) found that females rated high and immediate investment as more important in short-term than in long-term relationships—presumably because in long-term relationships, investment is more certain and cumulative, for example, a long-term relationship could lead to marriage and the support of children. In short-term relationships there is no expectation of this type of long-term payoff. Consequently, females tend to want male investment that is "up front" if they are to engage in short-term relationships that involve sexual relations. This principle may explain some women's willingness to be groupies, or otherwise engage in low-investment copulations. Our interviews suggested that in these encounters, women test their sexual attractiveness in competition with other women and exchange sexual access for the attention and time of men who otherwise are unavailable to them. In such cases, inducing a man to copulate becomes a "challenge" and worthwhile only because the man has so many other women available to him that mere copulation becomes an affirmation and thus rewarding. In such encounters, multiple-partner women exchange sexual access for a type of male investment that is immediate and up front: his status, attention, and time.

Alternative Explanations

Study 2 was based on a small opportunity sample, so it is possible that its female subjects were anomalous. Furthermore, a critic could argue that the sex difference in the means and ranges of subjects' SOI scores was so large that males' and females' behavior, attitudes, and emotions might be similar if the sexes were matched for SOI scores or number of sex partners. Two large-sample, quantitative studies, however, have supported the Study 2 findings (Townsend 1995; Town-
These studies involved over 900 college students who were drawn from general requirement courses, such as introductory psychology. They revealed the following. The SOI consists of three components: three questions on sexual attitudes; one question on the frequency of polygamous fantasies; and three questions on sexual behavior (number of partners last year, number of partners foreseen in the next five years, and number of one-night stands; see "Method" in Study 2). These three components interrelate differently for males and females. For example, in one study men with fewer than eight partners had more permissive attitudes and more polygamous fantasies than women with more than eight partners, but these women had had a greater number of one-night stands and more sex partners in the previous year than the males with fewer than eight partners did (Townsend and Wasserman 1994). 

When the SOI's behavior items were compared for the male and female groups who had had more than eight partners, sex differences remained highly significant for one-night stands and partners foreseen even when subject's number of partners was entered as a covariate. As subject's number of sex partners increased, sex differences also increased in (1) the proportion of partners that had been one-night stands and (2) the proportion of coital acts in which the subject deliberately and preferentially eschewed emotional involvement. These results supported the proposition that males' lesser selectivity and their desire for partner variety allow virtually any heterosexual female to have as many sex partners as she wants, but not necessarily the particular partners she wants (Symons 1979). In contrast, males with fewer sex partners are less able to realize their polygamous fantasies and permissive attitudes than are females, and less able than are males with multiple partners. Consequently, attitudes are better predictors of females' number of partners than males' number of partners, and opportunity is a better predictor of males' number of partners than females' number of partners (Townsend and Wasserman 1994). 

It is possible that some of the women in Study 2 (e.g., those in Level 2) are not in a stage of increasing sensitivity and aversion to low-investment copulation, but rather reflect a qualitatively distinct mating strategy. Such women might pursue short-term copulations with men because the men possess indicators of good genes, rather than because of any material or emotional investments the men might offer (Gangestad 1993; Gangestad and Simpson 1990; Simpson and Gangestad 1991a, 1991b; Thornhill and Gangestad 1993). There are several problems with this interpretation. First, unlike Levels 1 and 2, in Level 3 women's emotional reactions to low-investment copulation had already caused them to adopt a more monogamous strategy. The women, however, in all three levels in Study 2 had some adverse emotional reactions to low-investment copulation, and those qualitative data suggested adverse emotional reactions were positively associated with numbers of sex partners and SOI scores in women but not in men. Concurrent quantitative studies support this conclusion. In two independent studies, females' SOI scores and number of sex partners correlated positively with feeling anxiety-vulnerability after intercourse. Furthermore, females with greater numbers of partners had as many thoughts about marriage, honeymoons,
and children as females with fewer partners did. For males, the incidence of these anxiety-vulnerability and marital-investment thoughts correlated negatively with SOI scores and number of sex partners (Townsend 1995; Townsend and Wasserman 1994). These results suggest that multiple-partner women desire investment as much as women with fewer partners do, and they suffer as much or more anxiety and distress if they fail to maintain control of investment. This interpretation is supported by Simpson (1987, p. 88) who found that women with high SOI scores “experienced more intense and prolonged emotional distress following dissolution than did the other three groups” (i.e., women with low SOI scores, men with low SOI scores, and men with high SOI scores). The study of medical students that we reviewed earlier revealed a similar pattern (Townsend 1987).

Together with these other investigations, the Study 2 findings suggest the following: (1) Women can maintain extremely permissive attitudes, as measured by the SOI and other questionnaire items, and yet have strongly negative reactions to low-investment copulations—reactions that channel them toward higher-investment relationships (Townsend 1987, 1995). (2) Important sex differences in the interrelationships of attitudes, fantasy, and behavior are obscured when the composite SOI score is the unit of analysis and subjects’ responses to individual questions are not examined (Townsend 1995; Townsend and Wasserman 1994). (3) Different emotional-motivational mechanisms underlie what superficially appears to be identical behavior in males and females (Symons 1979, 1989).

Second, it is probably true that both sexes prefer good-looking partners (e.g., partners with low fluctuating asymmetry), other things being equal (Gangestad 1993; Thornhill and Gangestad 1993; Townsend 1989). Consequently, the question is not whether various measures of physical attractiveness predict females’ selection of sex partners, but rather, how much of the variance in males’ and females’ partner selection, and in their attractiveness to the opposite sex, is predicted by physical and nonphysical traits. What sorts of tradeoffs between physical traits and status characteristics are men or women willing to make? Will a female college senior who has access to the dominant men in her circles voluntarily copulate with a low-status freshman or an uneducated construction worker who happens to have nice features (e.g., low fluctuating symmetry)? Will female doctors and lawyers copulate with working-class men simply because the men have nice faces and bodies?

Numerous studies indicate that sexual attractiveness consists of different components for men and women. Cues to dominance and to competitiveness and the opinions of peers strongly affected women’s ratings of men’s physical/sexual attractiveness but had no effects on men’s assessments of women’s attractiveness (Graziano et al. 1993; Sadalla et al. 1987). Similarly, low-status cues and costumes caused males who previously scored high in physical attractiveness to be rated by women as unattractive and unacceptable as sex partners. These cues had weaker, null, or opposite effects on males’ assessments of females’ sexual attractiveness (Hickling et al. 1979; Hill et al. 1987; Townsend 1989, 1993; Townsend and Levy 1990a; Townsend and Roberts 1993; Townsend and Wasserman 1994). High status cues made average-looking men more attractive...
and acceptable as dates and sex partners than better-looking men with low status. Since by definition most men are average looking, status characteristics are often decisive when women are choosing partners for sexual relations, but are less significant or nonsignificant when men are choosing (Townsend 1987, 1989; Townsend and Roberts 1993).

Studies of mate selection that use samples of college students limit the influence of status distinctions that operate in the adult world, for example, earning power and occupational prestige. Abstract survey items like "good earning capacity" are probably less important to college women, most of whom have never paid their own rent, than males' status in local hierarchies, for example, whether he is a senior or a freshman, president of the interfraternity council, first-string quarterback, or lead singer in a college rock band. Furthermore, most college students are middle class or will be when they graduate, so important class variability and distinctions that exist in the adult world are mitigated or eliminated in college populations. When information that is more important to females than to males is limited or absent from research designs (e.g., status, dominance, family background) females will base their attractiveness judgments on facial features or other physical traits by default, thus creating a misleading picture of male and female differences and similarities (Morse et al. 1976). Given the availability of effective contraceptives and the typical college student's lack of financial and parental responsibilities, college women are probably freer than at any other time in their lives, and freer than women have been any other time in history, to experiment sexually and test their attractiveness with men who are considered sexually attractive in their circles. Studies that do not consider and control for these characteristics tend to understate sex differences in sexuality and mate selection criteria (Townsend and Levy 1990a).

Good looks definitely help to make a man more attractive to women, but experimental, ethnographic, and demographic evidence suggests that women seldom voluntarily date or sleep down from their own particular status, whereas men are very willing to date and sleep down, and even willing to marry down if the woman is sufficiently physically attractive (Blumstein and Schwartz 1983; Buss 1989a; Goldman et al. 1984; Hill et al. 1987; Kenrick and Keefe 1992; Naficy 1981; Novak 1983; Remoff 1984; Townsend 1987, 1989, 1993; Townsend and Roberts 1993; Udry and Eckland 1984; Wiederman and Allgeier 1992). For males, potential partners' physical attributes largely determine the pool of partners with whom they desire sexual relations. Physical attributes thus establish a pool of coitally acceptable partners and open a door of opportunity for these partners in which the necessity or desirability of further investment can be explored. Compared to males, when females choose partners, nonphysical characteristics like ambition, dominance, and status in local hierarchies are more decisive in establishing a pool of partners who are potentially acceptable for sexual relations and higher-investment relationships. Partners' physical attributes appear to have their greatest effects on women's choices within this pool. We therefore suggest that nonphysical characteristics, like status in local hierarchies, will ultimately prove to be stronger predictors of males' number of sex partners than will physical traits.
but physical traits are also significant predictors (Cunningham, Barbee, and Pike 1990; Gangestad 1993; Thornhill and Gangestad 1993). A final judgment awaits research that adequately controls for all of these factors.

Our Study 2 results thus supported the arguments of some other evolutionary researchers: Even when females voluntarily engaged in low-investment copulation and expressed extremely permissive attitudes, their emotions urged them to test and evaluate investment, espy shirking and false advertising, and remedy deficiencies in investment (Buss 1989b; Symons 1979, 1987, 1989; Townsend 1987, 1995). Consequently, even when females had resolved not to do so, they tended to evaluate investment and long-term potential rather than copulation and partner variety being end goals themselves (Buss and Schmitt 1993). Negative emotional reactions to low-investment copulation caused some women to begin to avoid casual sexual encounters despite their resolve to engage in casual sex and their permissive attitudes. Their emotional reactions thus seemed to channel and guide women toward higher-investment relationships, that is, relationships involving greater amounts of time, affection, nurturance, and intimacy. Bardwick (1971) presaged these findings in her study, *Psychology of Women*. She argued that as the sexuality of heterosexual females matures, it typically develops from an essentially egocentric, masturbatory activity to an active-receptive activity in which “*Coitus is perceived as the physical and psychological fusion with the loved man*... The primary source of physical sensation remains the clitoris; the site of physical-psychological fusion is the vagina” (pp. 66–67, emphasis original).

In this scheme, inculcation of sexual mores affects the development of sexual behavior and attitudes, but Bardwick’s thesis implies that as women gain sexual experience, they will typically develop the tendency to associate coitus with love, with or without specific cultural sanctions promoting that link (see also Weinrich 1988; Ellis and Symons 1990).

Gangestad and Simpson adduced a diverse body of evidence that women’s SOI scores correlate with Extraversion, Lack of Constraint, and other measures of social assertiveness and risk taking, and that the broad dimensions of these measures are substantially heritable (1990, p. 72). Viewing our findings in the light of those studies, we suggest the following: Women with multiple partners (and thus high SOI scores) have the same mental mechanisms for assessing sexual attractiveness and emotional investment as do women with fewer partners. Given their Extraversion and Lack of Constraint, however, more-partner women are more willing to take risks and use their sexuality than fewer-partner women to obtain what they perceive as highly sexually attractive partners, who usually have high status in the woman’s particular hierarchy. In their pursuit of highly attractive, high status partners, however, multiple-partner women sometimes overestimate their ability to acquire sufficient investment and underestimate the power of their emotional reactions when they eventually fail to obtain sufficient investment — hence their surprise, anger, and pain when this happens (Simpson 1987, p. 689; Townsend 1987). Collectively, these results suggest to us that the proceptive behavior of most highly sexually active females in college represents an experimental phase rather than a lifetime strategy. Undoubtedly, some of these women will urge countersend 199

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women will be polygamous and engage in extra-pair copulations intermittently, but the evidence we have examined suggests that as they do so, their emotions will urge them to garner emotional and/or material investments from their encounters despite any resolutions not to do so (Edwards and Booth 1976; Townsend 1995).

The emotional-motivational mechanisms that mediate human sexuality should exhibit the following characteristics: First, different types of emotions should have different physiological correlates. Second, these mechanisms should be able to operate without cognitive volition; otherwise they could be thwarted by socialization and manipulation, or by the individual's own inadvertent self-disclosure (Nesse and Lloyd 1992; Wilson 1975; Symons 1979; Trivers 1985). An impressive body of evidence now indicates that specific physiological events underlie specific emotions, that affect is processed prior to and independent of cognition (although these systems interact), and that both affective and cognitive computations are performed without conscious awareness (Davidson et al. 1990; LeDoux 1989; Zajonc 1980).

A third characteristic that an emotional-motivational mechanism should possess is that it should continue to operate after mating. Because humans do not have mechanisms that ensure that they mate for life, and many humans do not mate for life, a mechanism that atrophied after mating would be maladaptive (Fisher 1987; Symons 1978, 1985). Research consistently indicates that sex differences in desires and dissatisfactions can persist decades after marriage—men typically being dissatisfied with their sex lives and women with their husbands' ability as a provider or emotional communicator (Blumstein and Schwartz 1983; Buss 1989b; Cherlin 1979; Hatfield et al. 1989; Lockesley 1980; Murstein and Christy 1976; Kinsey et al. 1953; Rhyne 1981; Rubin 1983; Scanzoni 1978). Fourth, an emotional-motivational mechanism should be flexible enough to be overridden by conscious control when necessary—at least on a behavioral level. A total inability to calculate the advantages and risks involved would be maladaptive. Yet, the mechanism would have to be robust enough to emerge, at least as consciously experienced emotion, in a wide variety of environments.

The current findings suggest that human females' tendency to link sexual access to signs of investment and human males' tendency to engage in low-investment copulations with a variety of individuals exemplify the characteristics proposed by evolutionary researchers for adaptive emotional-motivational mechanisms.

REFERENCES


