FEMALE COITAL ORGASM AND MALE ATTRACTIVENESS

Todd K. Shackelford,
Viviana A. Weekes-Shackelford,
Gregory J. LeBlanc
Florida Atlantic University

April L. Bleske
University of Texas at Austin

Harald A. Euler and Sabine Hoier
University of Kassel, Germany

Female coital orgasm may be an adaptation for preferentially retaining the sperm of males with "good genes." One indicator of good genes may be physical attractiveness. Accordingly, R. Thornhill, S. W. Gangestad, and R. Comer (1995) found that women mated to more attractive men reported an orgasm during a greater proportion of copulations than did women mated to less attractive men. The current research replicates this finding, with several design variations. We collected self-report data from 388 women residing in the United States or in Germany. Results support the hypothesis that women mated to more attractive men are more likely to report an orgasm at the most recent copulation than are women mated to less attractive men, after statistically controlling for several key variables. Discussion addresses *(a)* the inability of the present research to specify the causal link between female orgasm and male attractiveness and *(b)* the proactive nature of female sexuality documented in recent research guided by an evolutionary perspective.

KEY WORDS: Evolutionary psychology; Female coital orgasm; Male attractiveness.

Female coital orgasm may be an adaptation for preferentially retaining the sperm of males with "good genes" (Baker and Bellis 1993; Thornhill et al. 1995). One indicator of good genes may be physical attractiveness, a heri-

table component of developmental stability (Gangestad 1993; Gangestad et al. 1994). Accordingly, Thornhill et al. (1995) found that women mated to more attractive men reported an orgasm during a greater proportion of copulations than did women mated to less attractive men. This relationship remained after controlling for several potential confounds, including the man's age and the duration of the couple's relationship. The current research is an attempt to replicate these findings, with several design variations.

Thornhill and colleagues (1995) assessed male attractiveness by securing ratings from independent observers. In the current research, women provided ratings of their partner's attractiveness in response to two probes: physical attractiveness and sexual attractiveness. Previous work suggests that women's relationship satisfaction predicts female coital orgasm (e.g., Singh et al. 1998; Trudel et al. 1993). Thornhill et al. (1995) did not include a specific assessment of women's relationship satisfaction as a potential confound of the link between female coital orgasm and male attractiveness. In the current research, we assessed women's relationship satisfaction using two probes: overall relationship satisfaction and emotional satisfaction. We examined the link between female coital orgasm and male attractiveness after controlling for female relationship satisfaction.

Thornhill and colleagues (1995) examined the link between male attractiveness and the proportion of copulations that included female orgasm. In the current research, we examined the link between male attractiveness and the likelihood that female orgasm occurred at the most recent copulation. The analyses conducted by Thornhill et al. (1995) included male age and relationship duration among the potential confounds of the link between female coital orgasm and male attractiveness. The current research also addresses these variables as potential confounds.

In summary, the current research attempts to replicate with several design variations the findings of Thornhill and co-authors (1995). We test the hypothesis that women mated to more attractive men (relative to women mated to less attractive men) are more likely to report an orgasm at the most recent copulation, controlling for women's relationship satisfaction, relationship duration, women's age, and men's age. To test this hypothesis, we collected self-reports from 388 women living in the United States or in Germany.

METHODS

Participants

Participants were 388 women in committed, sexual, heterosexual relationships. Participants were drawn from universities and surrounding

communities in two western countries, the United States (N = 239) and Germany (N = 149). To increase the power of the analyses, we collapsed the data across countries. Each analysis also was conducted by country, with no substantial differences in the conclusions. The power of the tests conducted by country was considerably lower. Therefore, we combined data provided by participants from the two countries. Participants ranged in age from 17 to 62 years, with a mean age of 22.8 years. Table 1 provides additional descriptive statistics.

Materials

Participants completed a three-page survey. The first section of the survey collected demographic information, including the participant's age, her partner's age, and the length of their relationship. The second section of the survey asked about female coital orgasm and partner's attractiveness. First, women were asked if they had an orgasm during the most recent sexual intercourse with their partner. Specifically, participants were asked: "Did *you* have an orgasm just before, just after, or during the last time you had sexual intercourse with your partner? Please check only one:

___ Yes, I definitely DID have an orgasm.

___ No, I definitely did NOT have an orgasm.

___ I'm not sure or I can't remember if I had an orgasm."

The orgasm variable was coded "1" if the participant checked "Yes . . ." and "0" otherwise. The next two questions asked participants to rate the following items, from 0 (Not at all) to 9 (Extremely): How physically attractive is your partner? How sexually attractive is your partner? The third

Table 1. Descriptive Statistics for Target Variables, by Orgasm at Last Copulation

| | Last Copulation | | | |
| | Orgasm (N = 252) | | No Orgasm (N = 88) | |
Variable	Mean	s.d.	Mean	s.d.
Woman's age (years)	22.9	6.9	22.9	8.5
Partner's age (years)	25.5	7.6	25.9	10.3
Woman's ratings of partner's attractiveness[a]	7.6	1.4	7.0	1.7
Woman's relationship satisfaction[b]	7.5	1.6	7.0	2.0
Relationship duration (months)	39.2	60.9	31.5	54.5
Woman's age and partner's age[c] (years)	24.2	7.0	24.4	9.3

[a] Composite variable (see text), with scale anchored by 0 (not at all attractive) and 9 (extremely attractive)

[b] Composite variable (see text), with scale anchored by 0 (not at all satisfied) and 9 (extremely satisfied)

[c] Composite variable (see text), mean age of woman and her partner

section of the survey asked participants to rate their overall relationship satisfaction and their emotional satisfaction with the relationship on 10-point scales anchored by 0 (Not at all satisfied) and 9 (Extremely satisfied).

The translation of the survey from English to German proceeded as follows: A bilingual speaker translated the English language survey into German. A second bilingual speaker unaware of the contents of the original English language survey back-translated the German language survey into English. The two bilingual speakers consensually resolved the few resulting discrepancies between the original English language survey and the back-translated English language survey.

Procedure

Data collection occurred in two contexts. First, women in social science courses were asked to voluntarily complete the survey during the last few minutes of a class session. Second, a trained research assistant approached prospective participants at various locations on and around university campuses. These locations included coffee shops, shopping malls, and airports. The research assistant approached a woman selected at random and asked if she would be interested in completing a short survey about sexuality. If the woman was interested, the research assistant asked if she was currently in a committed, sexual, heterosexual relationship. If these criteria were met, the research assistant handed the woman a consent form, the survey, and a 9" × 12" brown security envelope. The participant was instructed to read and sign the consent form, complete the survey, place the completed survey in the envelope, and then seal the envelope. The participant was instructed to place the sealed envelope in a box that contained other sealed envelopes. The participant was asked to place the signed consent form in a separate envelope that contained other signed consent forms. The research assistant explained the purpose of the study, answered any questions, and thanked the woman for her participation.

The procedure for data collection in class settings began with a trained research assistant explaining that female participants were needed for a study on sexuality. This request for participants occurred during the last few minutes of a class session. The research assistant explained that women in committed, sexual relationships who were interested in voluntarily completing a short survey on sexuality should remain in the classroom. Students who did not fit the criteria or who did not want to participate were given several minutes to exit the classroom. The remainder of the procedure for classroom data collection was identical to the procedure described above for the public approach method. About half the participants were obtained through the public approach method. Most participants completed the survey in 3 to 5 minutes.

RESULTS

Two hundred fifty-two women (64.9% of the sample) reported that they definitely had an orgasm at the last sexual intercourse with their partner. Eighty-eight women (22.7% of the sample) reported that they definitely did not have an orgasm at last sexual intercourse. Forty-six women (11.9% of the sample) reported that they were not sure or could not remember if they had an orgasm at last sexual intercourse. Two women (0.5% of the sample) did not provide a response for this question. For purposes of the analyses, we·adopted a conservative approach such that the occurrence of orgasm was recorded only if a woman indicated that she definitely had an orgasm. The absence of orgasm was recorded only if a woman indicated that she definitely did not have an orgasm. Responses of "I'm not sure or I can't remember . . ." were excluded from all analyses.

In summary, all analyses were based on data provided by 340 women, with 252 (74.1%) reporting that they definitely did have an orgasm at last sexual intercourse with their partner and 88 (25.9%) reporting that they definitely did not have an orgasm at last sexual intercourse with their partner. Thornhill et al. (1995) asked women how often, on average, they had an orgasm during sexual intercourse with their partner. The women in that sample reported having an orgasm during sexual intercourse about 60% of the time (s.d. = 29.5%). Although the current project and the work by· Thornhill and colleagues (1995) asked different questions regarding female coital orgasm, the figures appear to be reasonably comparable; in both samples, the women reported an orgasm during a majority of sexual intercourse episodes with their partner.

Three of the variables examined are composites. Partner's attractiveness (α = .82) is the mean of two variables: ratings of partner's (a) physical attractiveness and (b) sexual attractiveness. Relationship satisfaction (α = .85) is the mean of two variables: women's (a) overall relationship satisfaction and (b) emotional satisfaction. The ages of the woman and her partner were highly correlated (r = .91). We created a composite variable for the woman's age and her partner's age (α = .95) by computing the average of these two variables. The results do not change when the ages of the woman and her partner are examined independently.

Tables 2 and 3 present the results of logistic regressions of the target variables on the dichotomously coded female coital orgasm variable. The test statistic displayed in Tables 2 and 3 is the Wald statistic. The Wald statistic is calculated as the squared ratio of the unstandardized regression coefficient to its standard error of estimate, and it is approximately distributed as chi-square under the null hypothesis. Table 2 shows that women who rated their partner as more attractive (relative to women who rated their partner as less attractive) were more likely to report an orgasm at the last

Table 2.   Female Orgasm at Last Copulation Predicted by Woman's Ratings of Partner's Attractiveness

Predictor	B	s.e.	Wald
Partner's attractiveness[a]	.2273*	.0785	8.3954
(Constant)	−.6018	.5803	1.0755

Female orgasm coded as: 1 = orgasm, 0 = no orgasm
B = unstandardized regression coefficient
s.e. = standard error of unstandardized regression coefficient
Wald = (unstandardized regression coefficient/standard error of estimate)^2
For all variables, df = 1; * $p < .01$ (two-tailed).
[a] Composite variable (see text), with scale anchored by 0 (not at all attractive) and 9 (extremely attractive)

Table 3.   Female Orgasm at Last Copulation Predicted by Woman's Ratings of Partner's Attractiveness, Woman's Relationship Satisfaction, Relationship Duration, and Woman's Age and Partner's Age

Predictor	B	s.e.	Wald
Partner's attractiveness[a]	.2071*	.0833	6.1832
Woman's relationship satisfaction[b]	.1089	.0749	2.1107
Relationship duration (months)	.0050	.0033	2.3032
Woman's age and partner's age[c] (years)	−.0209	.0214	0.9479
(Constant)	−.9014	.8942	1.0163

[a] Composite variable (see text), with scale anchored by 0 (not at all attractive) and 9 (extremely attractive)
[b] Composite variable (see text), with scale anchored by 0 (not at all satisfied) and 9 (extremely satisfied)
[c] Composite variable (see text), mean age of woman and her partner
* $p < .01$ (two-tailed)

copulation. Table 3 shows that this relationship remained after controlling for women's relationship satisfaction, relationship duration, and the composite age of the woman and her partner. Partner's attractiveness is the only variable that significantly predicted the likelihood of female coital orgasm at last copulation.

DISCUSSION

We hypothesized that women mated to more attractive men (relative to women mated to less attractive men) are more likely to report an orgasm at their most recent copulation, controlling for women's relationship satisfaction, relationship duration, and the ages of the woman and her partner. Analyses conducted on self-report data collected from several hundred

women living in the United States or in Germany support this hypothesis. These results replicate the findings of Thornhill et al. (1995) and provide corroborating evidence that female coital orgasm may be an adaptation to retain the sperm of males with "good genes."

One limitation of the current research is that we cannot determine the causal direction of the relationship between female orgasm and male attractiveness. According to the proposal that female orgasm is designed to retain the sperm of males with "good genes," and assuming attractiveness is a heritable indicator of good genes, we hypothesized that mateship to an attractive man increases the likelihood of female coital orgasm. The correlational design of this study does not allow us to rule out the possibility that the direction of causation is different. For example, having an orgasm at last copulation might cause a woman to rate her partner as more attractive. Or some unmeasured variable might increase the likelihood of female coital orgasm and, in addition, produce higher ratings of male attractiveness. In this case, the link between female coital orgasm and male attractiveness would be spurious. Thornhill et al. (1995) documented a positive relationship between female coital orgasm and male attractiveness as assessed by independent observers. Their design precluded the possibility that orgasm causes higher attractiveness ratings, because the data for the two variables were secured independently. We propose that a similar causal relationship accounts for the link between female orgasm and male attractiveness found in the current work.

Recent work by Baker and Bellis (1993, 1995) and by Thornhill et al. (1995) suggests that the timing of female orgasm relative to male ejaculation may impact sperm retention. In hindsight, we regret not collecting data on the timing of female orgasm relative to her partner's ejaculation. Notwithstanding these methodological and design limitations, the current research adds to a growing body of work consistent with the hypothesis that female coital orgasm is an adaptation designed to retain the sperm of favored males.

Todd K. Shackelford received his B.A. in Psychology from the University of New Mexico in 1993, his M.A. in Psychology from the University of Michigan in 1995, and his Ph.D. in Psychology from the University of Texas at Austin in 1997. He is currently Assistant Professor of Psychology at Florida Atlantic University. Trained as an evolutionary psychologist, his current research interests include human sperm competition and spousal battery and homicide.

Viviana A. Weekes-Shackelford received her B.A. in Psychology from Florida Atlantic University in 1999, and currently is a graduate student in psychology at Florida Atlantic University. Her current research interests include evolutionary psychological approaches to female sexuality and homicide-suicide.

Gregory J. LeBlanc received his B.A. in Psychology from Florida Atlantic University in 1998 and currently is a graduate student in psychology at Florida Atlantic University. His current research interests include evolutionary psychological approaches to romantic relationships and the psychology of human sperm competition.

April L. Bleske received her B.A. in Psychology from the University of Wisconsin at Madison in 1996 and is currently a graduate student in psychology at the University of Texas at Austin. Her current research interests include evolutionary psychological approaches to same-sex and opposite-sex friendship.

Harald A. Euler received his B.A. in Psychology from the University of Bonn in 1965. As a Fulbright Scholar, he received his Ph.D. from Washington State University in 1972. Since 1974, he has been a Professor of Psychology at the University of Kassel. His current research interests include the evolutionary psychology of family relations, human sperm competition, and the therapy of stuttering.

Sabine Hoier received her M.A. in Biology and Sociology from the University of Kassel in 1996, where she is currently a Scientific Assistant. Her research interests include human sperm competition, family relations, interest in children, and women from nontraditional families.

REFERENCES

Baker, R. R., and M. A. Bellis
    1993   Human Sperm Competition: Ejaculate Manipulation by Females and a
           Function for the Female Orgasm. *Animal Behaviour* 46:887–909.
    1995   *Human Sperm Competition*. London: Chapman & Hall.
Gangestad, S. W.
    1993   Sexual Selection and Physical Attractiveness: Implications for Mating
           Dynamics. *Human Nature* 4:205–235.
Gangestad, S. W., R. Thornhill, and R. A. Yeo
    1994   Facial Attractiveness, Developmental Stability, and Fluctuating Asymmetry. *Ethology and Sociobiology* 15:73–85.
Singh, D., W. Meyer, R. J. Zambarano, and D. F. Hurlbert
    1998   Frequency and Timing of Coital Orgasm in Women Desirous of Becoming
           Pregnant. *Archives of Sexual Behavior* 27:15–29.
Thornhill, R., S. W. Gangestad, and R. Comer
    1995   Human Female Orgasm and Mate Fluctuating Asymmetry. *Animal Behaviour* 50:1601–1615.
Trudel, G., L. Boulos, and B. Matte
    1993   Dyadic Adjustment in Couples with Hypoactive Sexual Desire. *Journal of
           Sex Education and Therapy* 12:31–36.