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Jealous? Maybe It's Genetic. Maybe Not.

By ERICA GOODE

Jealousy, according to evolutionary psychologists, evolved a million or so years ago on the African plain, where life was no picnic.

Out there on the savanna, a man had to constantly guard against cuckoldry, lest he squander his resources, unwittingly feeding that hard-earned leg of mastodon to some other guy's progeny.

Women had other things to worry about, like keeping the meat coming in. Sure, it bothered them if their men indulged in a little hanky-panky by the watering hole. But the real threat was if a man became emotionally attached to another woman: who would bring home the mastodon then?

At least, that's the theory advanced by evolutionary psychologists, who in the last decade have ushered Darwinian theory into new and provocative areas, including the relationship between the sexes. As a result of such differing survival pressures long ago, they maintain, the brains of modern men and women are programmed to respond differently to the infidelity of a romantic partner. Men become more jealous over sexual infidelity, a strategy that worked pretty well in the Stone Age, promoting reproductive success. Women are more distressed by emotional betrayal, which could leave them without resources.

It is an appealing argument in a society where men are considered to be from Mars and women from Venus, and one that has gained substantial purchase among evolutionary scientists and in popular literature. It is also supported by a variety of studies finding evidence for such a sex difference, many of them carried out by Dr. David M. Buss, an evolutionary psychologist at the University of Texas, and his colleagues.

"Men and women may be equally jealous, but the events that trigger jealousy differ," Dr. Buss wrote in "The Dangerous Passion: Why Jealousy Is as Necessary as Love and Hate."

Other scholars have not been so convinced. They have argued that it is more likely that differences between men and women that evolutionary psychologists attribute to natural selection — like the tendency of men to be polygamous and women, monogamous — are the product of cultures, not evolution. Jealousy is probably no exception.

So the nature-nurture debate has continued over the years.

But two new research papers take a different tack. They do not dispute that evolution plays a role in shaping human behavior. But they question the evidence assembled by Dr. Buss and others for the notion that jealousy evolved differently in men and in women.

In one paper, to appear in the November issue of *The Journal of Personality and Social Psychology*, researchers

led by Dr. David DeSteno, a psychologist at Northeastern University, assert that the sex difference revealed in many studies of jealousy by evolutionary psychologists is spurious, an artifact of the particular method used in those studies.

They suggest that, rather than representing a hard-wired psychological mechanism for promoting reproduction, jealousy could have evolved in each sex for some more general purpose — for example, protecting social bonds in a very social species.

"I'm very sympathetic to the evolutionary view," Dr. DeSteno said. "I think it's ridiculous to assume that the human mind was not subject to the evolutionary chisel. But I think there can be numerous evolutionary arguments for how specific social behaviors develop."

Dr. DeSteno and his colleagues — Monica Y. Bartlett and Julia Braverman of Northeastern and Dr. Peter Salovey of Yale — say the problem with many of the studies conducted by Dr. Buss and other investigators is that they all use the same technique: the subjects are asked to call to mind a serious committed relationship that they had, that they now have or that they would like to have.

They are then presented with two forms of infidelity — one sexual, one emotional — and asked which they would find most distressing. (Dr. Buss calls this method "Sophie's Choice," referring to the book and movie in which the title character must choose which of her children will be killed. Other psychologists call it "forced choice.")

Using this method, virtually every study has found a difference between the sexes, with women being more likely to pick emotional infidelity as the most upsetting choice.

But Dr. DeSteno and his colleagues conducted their own studies, adding other ways of measuring jealousy, for instance, asking the 111 subjects, undergraduates at Northeastern, to rate on a seven-point scale how upset they would be about each form of infidelity in turn, rather than having them choose between the two forms presented together.

When such other methods were used, the researchers found, the gap between men and women disappeared; both sexes said they were more disturbed by sexual infidelity.

They then investigated further, to determine the reason for the discrepancy between the techniques.

"It's very strange from an evolutionary perspective why the sex difference would only occur" in the forced-choice situation and not in others, Dr. DeSteno said.

One possibility, the researchers reasoned, was that instead of eliciting an automatic, preprogrammed response to infidelity — the kind one would expect from a mechanism designed by evolution — the forced-choice method sent the subjects into a more complex intellectual decision-making process, in which they weighed the trade-offs between the two unpleasant alternatives.

To test this hypothesis, the researchers conducted another study, in which half the subjects filled out a questionnaire asking, among other things, whether they would be more upset if a romantic partner "had passionate sex with someone else" or "formed a deep emotional bond to someone else." The other subjects were given the same task, but they were asked to simultaneously remember a string of numbers while answering the questions — a twist the researchers hoped would eliminate the possibility of complicated reasoning, forcing an automatic response.

The researchers found that among the subjects who completed the questionnaire free from distraction, the usual sex difference appeared, with more women choosing emotional infidelity. But among the subjects who had to remember the numbers, there was no sex difference; women, as well as men, identified sexual infidelity as the most upsetting.

"The fact that women's responses on the forced-choice measure mirrored those of men argues forcefully against the existence of innate sex differences," the researchers wrote.

Dr. Buss, however, said he failed to find the new research convincing. Dr. DeSteno and his colleagues, Dr. Buss said, had distorted the claims of evolutionary psychology.

"These authors take a kind of rigid, robotic, stereotypic and false depiction of the evolutionary hypothesis and then show that those robotic depictions are wrong," Dr. Buss said. "I could develop any number of contexts in which you could make the sex differences in jealousy disappear; the fact that you could create a laboratory experiment in which you do so is, in my view, a meaningless and trivial demonstration."

Besides, he added, a smaller study, published this year, found sex differences even when methods other than forced-choice were used to determine preferences. Dr. Todd Shackelford, an associate professor of psychology at Florida Atlantic University and a former student of Dr. Buss, also had objections.

"I guess, to state it plainly, I think the paper is in large part ludicrous," he said. "It's clear to me that they have an agenda they're pushing."

Yet in an extensive critique, to be published next year in the journal Personality and Social Psychology Review, Dr. Christine R. Harris, a psychologist and research scientist at the University of California at San Diego, says Dr. DeSteno and his colleagues have identified only one of many serious flaws in the case for evolved sex differences in jealousy.

"The evidence supporting this theory is far less conclusive than is often maintained," Dr. Harris said.

For example, she pointed out that the forced-choice studies of jealousy have found differences between American and European men as large as those between American men and women. And in some Asian cultures, the disparity is even larger: only 25 percent of Chinese men, for example, chose sexual infidelity as more distressing in one study; 75 percent picked emotional infidelity.

Such findings, Dr. Harris wrote, seem "quite problematic" to a theory that posits an evolutionarily evolved mechanism operative in most, if not all, humans, while the results are compatible with the idea that culture influences the jealous responses of men and women.

Another difficulty, she continued, is that some studies examining real instances of unfaithfulness — as opposed to the imagined infidelity of college students and other laboratory subjects — found very different patterns of results.

In one study, involving adults living in sexually open marriages, for example, more women than men reported being bothered by the thought of their mate's engaging in sexual intercourse with another person, Dr. Harris said. Another study found that both men and women dwelled more on the sexual side of a mate's infidelity than the emotional aspects.

Dr. Harris also takes on the finding, reported in the 1980's by evolutionary psychologists like Dr. Martin Daly

and Dr. Margo Wilson at McMasters University in Ontario, that men are far more likely than women to kill their spouses out of sexual jealousy. Men, Dr. Harris pointed out, are more likely to be the perpetrators in all forms of violent crime. When the proportion of homicides involving jealousy is considered, rather than the absolute number of such acts, women are just as likely to kill out of jealousy as men are.

Perhaps predictably, such arguments are unlikely to put an end to the continuing debate over evolution's role in shaping jealous passion.

Dr. Shackelford waved away Dr. Harris's critique and the criticisms made by other researchers as misguided forays intended "to cater to the muddled masses of mainstream psychology."

Dr. Buss, for his part, offered the verbal equivalent of a shrug.

"People have always been resistant to evolution," he said. "We're in the midst of a scientific revolution in the field of psychology."

"It took 400 years for the Catholic church to forgive Galileo," he added. "Will it take longer for this? I don't know, but it's going to happen."

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