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Here's what we did before
we could tell stories about
our most intimate acts.

By ANNE FOERST

MOST HUMANS HAVE BURDENED SEXUALITY WITH LOTS OF BAGGAGE.

Instead of seeing it as a natural part of our bodily functions and desires, we often see it as something complicated, hidden, dirty, or amoral; we rarely classify it as such a natural act as eating or drinking. Among the books in my library, I have copies of medieval penitentials (guidelines for Catholic priests) in which coitus interruptus demands 10 years of penitence and anal intercourse, 15. The worst crime, according to these texts, is oral sex, which demands a lifelong penance — while premeditated murder requires only seven years. In parts of the world today, these types of beliefs are not considered medieval at all.

For years I worked as both a theologian and research scientist at the MIT Artificial Intelligence Lab. Our project was to build a humanoid robot. In this atmosphere, we referred to real humans as “meat machines” and did our best to avoid the word “consciousness.” My favorite robot, Kismet, was built to mimic emotions. People reacted emotionally to Kismet as if it were human, making up stories about their interactions. Even those of us who worked on Kismet made up stories as if our cute little robot were alive. We couldn’t help ourselves, and it became clear to me that what makes humans unique among living creatures is that we are constantly telling stories about who we are, what we’re doing, and what we should be doing. Our goal at the AI lab was to figure out who we are underneath the stories so that we could duplicate a human with computers and fancy engineering.

Nowhere are our real human stories so thick and complicated as they are around sexuality. So in an attempt to understand who we are underneath those stories, I began to examine how our relatives in the animal kingdom handle their sex lives. Of course, comparative ethology (animal behavior) cannot ultimately answer the hard questions about human homosexuality, fidelity, monogamy, infanticide, or pedophilia. But it does suggest some basis for a less heated and more relaxed discussion. It might especially answer one of the most basic questions that fuels discussions about sex: is it for procreation or pleasure?

MEET THE PRIMATES

Usually, those who study comparative ethology take a physical feature that differs among closely related species and figure out how these differences evolved and manifested themselves in different behaviors. To understand sexuality, researchers began by looking at the size of primates’ testicles, since testicles store sperm and were easy to measure. What they found was that gorillas, a very large primate, have tiny testicles. Orangutans are the same size as gorillas, but have larger testicles. Gibbons’ testicles are about the same size as orangutans’ in relation to body size. Bonobos, the closest genetic relative to humans, have testicles that are relatively larger than orangutans. Human testicles’ size is comparable to bonobos. Of the primates, chimpanzees have the largest testicles: twice the size of a human male, even though the chimp is only half the size of a human — which equates to a chimp’s testicles being four times as big, relative to body size.

After measuring primate testicles, ethologists attempted to come up with a hypothesis about the reason for the differences. Since testicles store sperm, they first argued that testicle size was an indicator of the level of sexual activity. But they knew that human men ejaculate even after their sperm is used up. They also knew that bonobos are much more sexually active than chimps, who have larger testicles. So this initial hypothesis didn’t hold.

Another hypothesis assumed sperm competition: If a female had sex with several males, the male whose ejaculate contained the most sperm had the greatest chance of impregnating her, which would make big testicles an advantage. If sperm competition was the reason for different size testicles, then tiny-testicle gorillas have no sperm competition and gibbons and orangutans have some. Humans and bonobos would have more sperm competition and chimps would be really competitive.

This hypothesis didn’t hold up completely when researchers took into account two other factors: monogamy versus polygamy, and infanticide (the killing of offspring by a new male partner in a female’s life). Infanticide is an important consideration because primates typically only give birth every few years, as their offspring need a lot of care. They also usually give birth to a single baby. As long as they are suckling the young, they are infertile. If a male kills the suckling offspring, the female goes into estrus sooner and he can impregnate her and multiply his DNA; hence, it is advantageous for him to kill any suckling offspring his mate has had with another partner. So let’s look at the monogamous versus polygamous lifestyles, testicle size, and infanticide occurrence together in the primate group.

Gibbons and orangutan males, who have moderate-sized testicles because they face some sperm competition, live independently from females and don’t participate as parents. Gibbons tend to be monogamous; orangutans are not. Gibbons males don’t commit infanticide, while orangutan males do — which leads to the hypothesis that monogamy is one strategy to avoid infanticide.

Gorillas live in “harem style” — that is, multiple females are absolutely faithful to one male, coupling about 10 times for each pregnancy, and the male is equally faithful to the members of his harem and does not practice infanticide. The male also participates as a parent with his offspring. We can hypothesize that faithful partner bonding correlates with no infanticide and no sperm competition correlates with tiny testicles.

Chimps live in larger groups than the tiny-testicle gorillas



SIZE AND AGGRESSION

As has often been pointed out, sex and aggression are intrinsically linked. And, indeed, we can find correlations between sexual behavior, body size, and the level of aggression in primates. Orangutan and gorilla males are much larger than their female counterparts and are very aggressive. Males fight each other and dominate their mates. Chimp males are only slightly larger than the females and are aggressive toward strangers and competitive males. Aggression does not correlate with chimp males being much larger than females; instead it correlates to huge testicles — for winning in sperm competition. Bonobo males and females are of equal size, which correlates with no aggression whatsoever. It wouldn't do for male bonobos to fight for a higher position in the hierarchy when that energy might be much better used for sex.

Here is one more interesting fact: In most primates the female estrus is clearly visible. That is, every male knows when the female is fertile, and that is when they tend to mate. The only animals with a hidden estrus are

— groups so large that it would be impossible for one male to dominate. Female chimps tend to have public sexual relations with the alpha males, but they are frequently observed sneaking away from the group of alpha males to have sex with others. We posit that their goal is to mate with as many males as possible — 500 to 1,000 couplings per pregnancy — so that each male will feel somewhat protective of all the babies, since each male could be any baby's father. Thus, male chimps face intense sperm competition and have huge testicles. They do not practice infanticide within their own group, but if a male chimp meets a strange female, he will kill her suckling offspring to send her into estrus.

Finally, there are bonobos, who have sex the most frequently of all the primates — up to 3,000 times per pregnancy. Females have sex with every male around. Sex is common between fathers and daughters and mothers and sons. In order to avoid offspring from incestuous unions, males are known to visit several groups of females. Bonobo males participate in parenting and do not practice infanticide. Researchers believe that the smaller testicle size of bonobo males is explained because they “win” not through quantity of sperm, but through frequency of couplings. They seem to embody the phrase “make love not war” — which leads to our next important correlation.

bonobos, which mate all the time, and humans. These are also the only two primate species that engage frequently in homosexual activities (although several non-primate animals — elephants, deer, many birds, and particularly dolphins — have also been observed having same-sex relationships).

Now, what can we learn about human sex from these observations of primates? Well, first of all, our closest relatives, chimps and bonobos, almost certainly have sex for pleasure. Between 1,000 and 3,000 couplings per pregnancy strikes me as excessive if the goal were only pregnancy. And using this observation of our closest relatives we might then conclude that a reason for human sex is pleasure. And this is supported by yet another fact: human females are the only animals that experience menopause. Despite their infertility, women can stay sexually active their whole lives, which suggests that sex is driven by pleasure rather than procreation.

WHY WOMEN CHEAT

We know from research that if a human couple is physically separated — not living together — for a while, when they reunite and have sex, the sperm count of the ejaculate is

A DANCER EXPLORES HER INNER BONOBO

I'm almost 50 years old, and I've been dancing with community continuously for 18 years. I've gone from dancing defensively — "DON'T TOUCH ME" — to dancing with full-body contact; arms, legs, and hair entangled, or rolling all over other people in a puppy pile on the floor.

I have started community ecstatic dances in several different cities and still ask myself what's going on? Does the dance endorse inappropriate touch? Are my boundaries getting lost? Is all this touch consensual? What about my partner? How can I jump in and not get hurt? How do I know whom I can touch? What is safe touch? If I did this in a "public" dance, would it start a brawl? If we're so spiritual, why are we dancing like wild savages?

To explore all these questions would take a book, but I do know that you can unleash your inner bonobo in dance, enhance a monogamous relationship, and feel welcomed to return. It all starts with your intentions:

DANCE INNOCENTLY / Be curious. Be authentic. Be spontaneous. I wait until I'm moved to move by the dance. Each dance is fresh and new.

DANCE WITH INTEGRITY / Be committed to exploring yourself even when you're dancing with someone else. Remember, you are your primary partner for life! You are the center of your universe. Know yourself.

STRETCH YOUR BOUNDARIES / Your boundaries are elastic just like your heart muscle. Be generous in giving and receiving love. This is your sacred playground. Play fair. Take turns.

DANCE BAREFOOT / You'll feel more grounded barefoot. You will also be more willing to fall off balance and be swept off your feet.

KEEP YOUR EYES OPEN / Be responsible for yourself. Open Eyes, Open Heart! Be willing to see and respond. Our body language speaks louder than words. See what you're saying and see what others are saying with their bodies.

DANCE SELFLESSLY BUT INDULGENTLY / Imagine everybody expressing their own unique magic, their own form of love. This is how we create peace on this planet. Being free requires responsibility. We're all responsible for creating a magical time.

BARE YOUR SOUL / Imagine communicating so clearly from your heart that your words and your body gestures say the same thing. What if we're evolved bonobos in a human suit? "Monkey see, monkey do." I am moving through the world with my eyes and heart wide open. I bare my soul and all the while I am selfless but indulgent. **SEH**

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much higher than usual. This has nothing to do with a lack of sexual activity — if a couple is together but abstains from sex, the sperm count of the ejaculate remains average when they resume sexual activity. Researchers believe that the reason for the male's higher concentration of sperm after being separated from his mate is an attempt to thwart competition. Studies of human mitochondrial DNA (DNA that comes only through the female side) show that a significant percentage of women have offspring from more than one partner. Other studies of apartment dwellers suggest that a significant percentage of offspring are not related to the male in the household, so the male strategy makes sense because females are not always monogamous. Why? Perhaps there's an evolutionary reason.

We know that the female is interested in good genes for her offspring. Smell tests demonstrate that a woman tends to prefer different male smells during ovulation than during her period. Some researchers interpret this to mean that a woman seeks out an alpha male during ovulation for strong genes — the sort of alpha males who are hunted by several females and thus are unlikely to stick around — and a non-alpha male for care-giving while she is pregnant and nursing. A woman can cheat because she always can be sure that her child is hers. A man, on the other hand, always runs the risk of spending his life raising another man's child. He can only assume a baby is his, and he increases his chances of paternity by being constantly with his mate.

If this is true — that women are likely to cheat on their mates and that the cost to the male is much higher — it would be logical that the taboo against women sleeping around is stronger in human society than the taboo against males.

Even sources as old as the Biblical Ten Commandments point toward this evolutionary difference. The commandment "You shall not commit adultery" does not refer to our modern understanding of faithfulness. The Bible contains many stories of married men having several women (Solomon famously had 700 wives and 300 mistresses) or going to prostitutes. On the other hand, women who break their marriage vows are punished. So the commandment gives women and men different responsibilities in a breach of marriage. A woman can only break her own marriage vows; a married or unmarried man committing adultery with a married woman is also only responsible for breaching the woman's vows, not his own. If the married man has sex with a prostitute, this does not count as breaking the seventh commandment.

THE HIERARCHY OF ORGASM

Although popular culture holds that the male orgasm is more significant because it is necessary for ejaculation and procreation, a look at our primate relatives changes the perspective. Primate females have orgasms more frequently than males. We should remember that the default sex for all primate fetuses, including humans, is female. Without the hormonal intervention that occurs for XY-chromosomed fetuses after a few weeks of



gestation, every fetus would be born with female sexual organs (remember, guys, you have nipples that don't produce anything!). Embryologists assume that this is because female sex organs are more complex than male sex organs, so it is easier to turn female organs into male organs than the other way round. But when both kinds of sex organs are derived from the same female physiology, the orgasmic function must be very similar. And, indeed, this is the case. Let me give you an example:

When we are about to sneeze, the face fills up with blood and becomes warm. Then the muscles tighten, and suddenly the sneeze occurs with explosive force, the extra blood rushes out of the face, and the muscles relax. Sneezing can feel great, just as being unable to complete a sneeze feels frustrating.

Much the same thing happens during an orgasm. The penis and the clitoris fill up with blood and a huge amount of blood also rushes into the male and female pelvic area. The orgasmic muscle contractions help to get this blood out of the pelvis again. Both males and females are left frustrated when this orgasmic muscle contraction does not occur, because it then takes much more time to move the blood out of the pelvic area, therefore depriving them of the rapid discharge of tension and the feeling of resolution and satisfaction that orgasm brings. So both men and women need an orgasm for a fulfilled sexual experience.

And, here's another fact: the human clitoris has about 8,000 nerve fibers, twice as many as the human penis.

IS THE BIBLE REALLY ANTI-SEXUAL?

As a theologian, I am most familiar with the early codes of conduct that are Judeo Christian, and these stories continue to have an enormous influence over the lives of Americans. It is clear to me that the Bible directly addresses the power of female sexuality. In fact, the *Song of Songs*, translated by Carey Ellen Walsh in *Exquisite Desire: Religion, The Erotic, and the Song of Songs*, (Fortress Press, 2000) contains one of the most poetic passages of female sexuality that I have ever encountered:

"My beloved thrust his hand into the opening, and my insides ached for him. I arose to open to my beloved, and his hands dripped liquid myrrh." (5:4-5)

I have not seen many poems where female desire and arousal and its accompanying wetness, as well as the fragrance, is this explicitly described. Here are a few more examples:

"My beloved is to me a bag of myrrh that lies between my breasts." (1:13)

"I wish that you were my brother, that my mother nursed you at her breast; then if I met you in the street, I could kiss you and no one would despise me." (8:1)

"For love is as strong as death, passion fierce as the grave; its flashes are flashes of fire, a raging flame." (8:6)

"I adjure you, O daughters of Jerusalem, [. . .] do not stir up or
(continued on page 74)

arouse love until it delights.” (2:7, 3:5, 8:4)

Aside from the celebration of lust in the Song of Songs, the terminology in the Hebrew Bible for sexual encounters ranges from the neutral “to sleep with” and the chauvinistic “to enter” and “to conquer” (the same terminology as used in warfare) to the poetic *jada*, “to know.” *Jada* not only describes a sexual encounter, but also connotes the relationship between God and humans, and it is probably because of this terminology that the Church fathers included the Song of Songs in the Christian Bible as an allegoric description of the relationship between Jesus and the Church.

The Hebrew Scriptures are very positive toward the human body in general. In the first creation story (Gen 1) humans, male and female, are created in the image of God. The Hebrew term for image, *selem*, literally means “statue” or “clay image.” In fact, the word is usually used to describe a divine statue. But, according to the Ten Commandments, Jews are not allowed to make any images of God because, instead of adoring clay statues, we are to adore God in one another. Each one

of us, in a physical body, is a divine statue! So in the process of *jada* we do not only recognize the other, but God as well.

How about the New Testament? Most of us are probably familiar with Paul’s condemnation of sex in some of his letters — statements which have caused a lot of grief, as well as the oppression of women throughout the history of Christianity. But do we know anything about Jesus’s position on sexuality? While the so-called synoptic gospels of Marc, Matthew, and Luke don’t mention Jesus reflecting on sex, it is quite different in the fourth gospel, the gospel of John. When Jesus heals a blind man (chapter 9), he explicitly denies that the man’s blindness was caused by a “sinful” sexual act between his parents. And when the Samaritan woman approaches Jesus to learn from him, he finds fault with her not for having sexual relationships with five different men, but for being non-Jewish (chapter 4). For Jesus, according to John, God has sexually created humans (1:3, 3:4-6). And, finally, there is the beautiful scene between Jesus and Mary Magdala (chapter 20) when the Resurrected appears in front of her. She runs to him to hug him but he says: “Don’t touch me.” After the resurrection their

relationship has changed; it is not a relationship of touching, but a spiritual one.

A PRAYER FOR SEX

Humans are the only species that prefers sex in private, while all other animals, especially our closest relatives (chimps and bonobos), have sex in public. And while bonobos frequently enjoy the “missionary position,” it is only humans for whom the face-to-face sexual encounter seems to be the norm. These characteristics make human sex unique and intimate in a way that is lacking in other animals.

Yes, we are animals and clearly we have a lot in common with other primates, but the idea of *jada*, which makes any sexual encounter a potential encounter with the Divine, is mirrored in most, if not all, religions. And those negative elements, those stories we’ve learned to tell, the myths we have ingested about the sin of sex are neither in our biological make-up nor at the core of our religious stories.

SEH

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