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Inquiry: Primatology

Finding Mr. Right

by Ruth E. C. Prince

One of the wonderful things about science as a way of knowing, certainly compared to other ways of knowing, like religion, is the capacity to correct biases and wrong assumptions once they are known," said Sarah Blaffer Hrdy '68, PhD '75 in her October 12 keynote address for Radcliffe's gender and inquiry symposium, held in Agassiz Theatre.



A nineteenth-century engraving by J.J. Grandville illustrates the Victorian view of "coy" females evading the sexual advances of contesting males in order to discriminate between them and select the best one.

Hrdy, a primatologist, is an emeritus professor of anthropology at the University of California at Davis. The author of an evolutionary analysis of maternity (*Mother Nature: A History of Mothers, Infants, and Natural Selection*, Pantheon Books, 1999), she has made a life's work of reaching from one discipline to another--from primatology to anthropology, from evolutionary biology to women's studies-- to correct just a few of these biases. One such wrong assumption, that being female necessarily means being sexually coy, informed Darwin's brilliantly original theory of sexual selection, Hrdy said. Her talk was devoted to correcting this assumption.



Sarah Blaffer Hrdy '68, PhD '75 speaking at Radcliffe's gender and inquiry symposium.

According to Darwinian sexual selection, she said, males compete among themselves for access to females, leading to one of two possible scenarios: The female either chooses the one best male from the contestants, or one male successfully excludes all other rivals, leaving the female no choice but to mate with him. In Hrdy's view,

there are animals for whom Darwin's theory holds true, such as the pronghorn antelope. When the female pronghorn antelope is ready to conceive, she tests the males around her by forcing them to chase her at top speed. She then chooses the most vigorous male of all and mates with him alone, just once.

If all females mated with such discrimination, exclusivity, and singularity, then Darwin's theory would need no revision. However, Hrdy said, "the pronghorn's practice of mating just once turns out to be unusual among social creatures--a point overlooked by theoreticians who assumed that all females are innately very discriminating and predisposed to mate monandrously with just one male." Hrdy quoted from Darwin's 1871 statement, which asserts that the female is "with the rarest exception . . . less eager [to mate] than the male . . ." and that "she is coy, and may often be seen endeavoring for a long time to escape. . . ."



Photo: Daniel B. Hrdy

A female langur monkey solicits a male by presenting her rump and frenetically shuddering her head. In this species, there is no other conspicuous visual signal of ovulation. The female may also behave

as if she were in estrus at other times of the month, thereby concealing the actual time of ovulation.

While Darwin's theory of sexual selection reflects the Victorian era in which he lived, Hrdy said, studies of mating behavior across animals don't always support his view of sexuality. From the 1970s onward, study after study has shown that far from being coy, females in a wide range of species attempt to mate polyandrously; that is, with more than one male. For a start, almost all primates--excluding humans--mate at the initiation of the females. With some primates, notably the langur monkey (Hrdy's research subjects), males can be "surprisingly discriminating, even disinterested." Secondly, female libido, including that of humans, is cyclical and tends to peak around the time of ovulation. However, in many primates, including humans, females can mate at any time of the cycle and occasionally choose to do so even when pregnant.

Among chimps and baboons, Hrdy observed, estrus behavior is confined to a few days around midcycle, and ovulation is advertised by conspicuous pink swellings. Such swellings greatly confused Darwin. He wrote, "No case interested and perplexed me so much as the brightly colored hinder ends and adjoining parts of certain monkeys."

Hrdy, though, doubts "that even the most Victorian of gentlemen would have remained puzzled for long if he'd had the chance to observe a maximally swollen chimp soliciting and then mating one to four times an hour with as many as thirteen partners." Based on what is now known about macaques, chimps, and women, the sole function of the clitoris is believed to be providing pleasurable orgasmic responses, which condition females to seek additional sexual stimulation. That's hardly what we would expect to find, Hrdy noted, in a sex that was universally and necessarily coy.

Hrdy began her own research on the langur monkeys of India for one reason: Why, from an evolutionary perspective, would it behoove a female to seek out more copulations than needed to insure fertilization and "extra-contraceptive" sex at times when fertilization is impossible?

In her field studies, Hrdy had observed that approximately every twenty-seven months a new male would show up in a pack of langur monkeys. He drove out the resident male, took control of the

females, and systematically killed unweaned infants fathered by the previous resident male. Despite the langur mothers' attempts at resistance, such brutal infanticide was of great benefit to the new male: Once the infant had been killed, the now nonlactating mother would begin ovulating again and thus become available for impregnation by the new male.

What is most interesting to Hrdy is that the female langur monkeys, in response to their precarious circumstances, will often seek out and mate with potential new dominant males (in addition to mating with the resident male), as "an insurance policy" to increase the viability of their offspring.

Hrdy pointed out that the potential benefits of polyandry extend well beyond the primate order. Among a type of European sparrow, known as the dunnock, the females mate with several males. After the chicks hatch, the males calibrate the amount of food they bring to the nest according to the number of times they copulated with the mother during the time she was fertile.

When Hrdy first published her research twenty years ago, she encountered overwhelming opposition from the fathers of the field now known as evolutionary psychology. They objected to her very rational theories about why some females are polyandrous, and how polyandry is sometimes advantageous for females in terms of survival for them and their offspring. Her opponents still subscribed to the dogma of a universally coy female sex. They assumed that females, who were, after all, the egg-producing sex that invested more in reproduction than males did, would confine themselves to one male. That male, in the case of humans, would not invest in offspring unless he could be certain of paternity.

The ensuing debate caught the attention of sociobiologically-minded anthropologists, who began to ask some fascinating questions: Are there circumstances when it is advantageous for women to mate with more than one male? Can a woman who lines up several fathers for each child possibly be more successful at reproduction than a monandrous woman? In many cases, Hrdy said, the answer is yes.

In some societies, for example, people subscribe to "partible paternity," that is, the belief that an individual fetus is built up from installments of semen by all the men that the woman has had sex

with during the ten months prior to birth-- as is customary in large areas of Amazonia. In his research among the Ache of Paraguay, Kim Hill discovered that 63 percent of Ache children were ascribed to more than one father. Cofathers were publicly acknowledged and, in fact, provided for progeny that they believed to be partially theirs.

In Steve Beckerman's studies of the Bari, a fishing and horticultural people in Venezuela, two fathers actually increased the chances of infant survival. Eighty percent of 194 children with one secondary father--in addition to their primary one--survived to age fifteen. Children with only one father had only a 64 percent chance of survival. As soon as a Bari woman suspected pregnancy, according to Beckerman, she tried to seduce the best hunter or fisherman in her group.

By taking into account evolutionary pressures on females, Hrdy's sexual selection theory portrays females as active strategists bent on optimizing the survival of their infants. She emphasized that having one mate is often a woman's first choice--if she gets to choose the mate she wants and he is reliable in helping her rear her young. However, in situations where a father is likely to die, defect, or turn out to be undependable, mothers might be better off lining up support from more than one man.

"Across cultures," she said, "what stands out about these informal polyandrous arrangements . . . is not so much the hedonic spectacle of women 'having fun,' as the more enduring vision of women making do under difficult circumstances." Hrdy said it's a shame that evolutionists have taken such a long time to include female perspectives. But squandered opportunities have not been confined to science. Feminists, she noted, have lost out as well.

"[B]y prematurely condemning evolutionary perspectives, feminists failed to take advantage of a very powerful framework for understanding why men--often at a very deep and visceral level--are so interested in controlling women's reproductive functions," she said. "Or even, and I am speculating, why men have mental blocks against adopting female perspectives. And what, from a feminist perspective, could be more basic than that?"

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