

separate, faint ion tail."

That has been the accepted view among astronomers for four decades. But new findings based on infrared images of cometary dust are modifying the theory. Mark V. Sykes of the University of Arizona in Tucson suggests that comets are more like frozen mudballs, with ice making up just one-fourth of their mass and one-half of their volume.

Sykes was a graduate student in 1986 when he noticed something odd in the infrared images formed from data gathered three years earlier by the Infrared Astronomical Satellite. "Telltale streaks in the images," Cowen writes, "revealed the presence of giant, never-before-seen trails of dust particles associated with three comets that visit the inner solar system every three to seven years." The trails' pebble-sized debris was larger than the extremely tiny

particles in the dust tails visible when comets move near the sun. That same year, the European Space Agency's Giotto spacecraft flew within 605 kilometers of Halley's Comet and detected about three times as much rock as ice in the famous visitor.

More recently, Sykes and Russell G. Walker of Jamieson Science and Engineering, Inc., in Scotts Valley, California, have done a new analysis of the infrared images and found a total of 17 dust trails. From the amount of dust in the trails, they calculated that rocky debris accounts for three-fourths of a comet's mass and half of its volume. The rock-to-ice ratios, Cowen notes, are about the same as for Pluto and Neptune's largest moon, Triton. This lends support to the theory, around since the early 1980s, that many comets were formed in that outer region of the solar system.

A 'Herstory' Of Evolution

Charles Darwin thought there was a "passion gap" between male and female animals. The ardent males competed for females, evolving traits—massive horns in the case of bighorn sheep or protective manes in the case of lions—that helped them in contests with other males. Female animals were passionless and passive, just like "proper" Victorian ladies—and the impact of their choice of mates on the evolutionary process was, with rare exceptions, very minor.

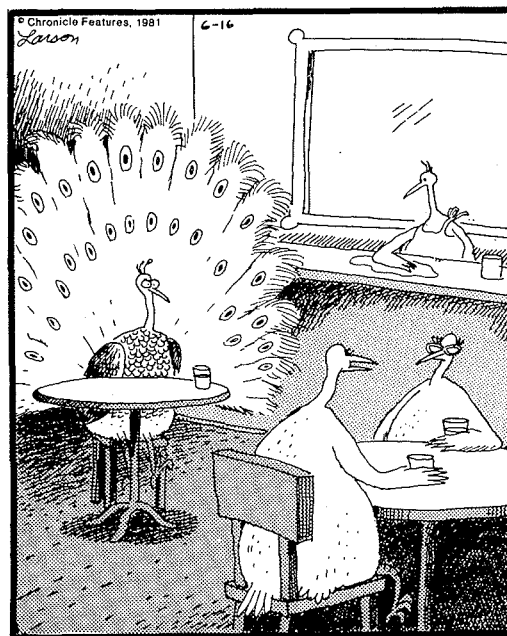
Darwin has been proven wrong about the passion gap: Female animals are anything but sexually passive. But evolutionary biologists, under the influence of feminism, have gone even further in recent decades: They have embraced the idea that females' choice of mates is a significant evolutionary force. After studying the mating behavior of a group of monkeys, however, Cornell anthropologist Meredith Small has her doubts.

That female choice could have an evolutionary impact on males was recognized by Darwin. The peahen's attraction for males with lavish tails, to take an oft-cited example, led to the peacock's extravagant adornment. But a different sort of female choice was proposed by British scientist John Maynard Smith during the 1950s. Studying a ritualized courtship dance of male and female fruit flies, he noticed that inbred males proved clumsy dancers and were rejected as mates. Smith suggested that the dance had evolved as a result of the choice of

"Female Choice in Mating" by Meredith F. Small, in *American Scientist* (Mar.-Apr. 1992), P.O. Box 13975, Research Triangle Park, N.C. 27709.

THE FAR SIDE

By GARY LARSON



"Don't encourage him, Sylvia."

The peacock's lavish tail has evolved for a simple reason: Peahens are attracted to it.

the female, acting in her own reproductive interests to screen out unfit suitors. The time was not right for Smith's suggestion, however, and

it attracted little attention. Not until the 1970s, and the rise of the feminist movement, did the scientific perspective on female behavior change.

In 1972, Robert Trivers of the University of California, Santa Cruz, argued that Darwin's dichotomy between competition as a male domain and mate choice as a female province made sense, not because of a passion gap but because of a difference in reproductive strategies: Males do best, in evolutionary terms, when they gain as many mates as possible (hence, their drive to compete), while females, who gestate and usually care for the infants, do best if they choose a mate who will enhance the survival of her offspring. This view has become the consensus among scientists.

But Small's observations of Barbary ma-

caques—and of 506 copulations, over the course of the monkeys' breeding season—led her to question the consensus. "Yes, female Barbary macaques do make choices," she writes, "but they seem to choose every male in the group, one after the other."

For female choice to have any evolutionary impact, Small notes, the choices must be consistent. Yet some female primates—perhaps just desperate to conceive—seem to mate with just about every male around. Scientists "have empowered the behavior of females by acknowledging their sexual assertiveness," Small writes, "but we often stop short of accepting that sexually assertive behavior might result in less than choosy behavior." Could it be that evolutionary biology is about to enter a postfeminist era?

ARTS & LETTERS

Defeating The Master

"Revision, Rewriting, Rereading; or, 'An Error [Not] in *The Ambassadors*'" by Jerome McGann, in *American Literature* (Mar. 1992), 304E Allen Building, Duke Univ., Durham, N.C. 27706.

"A curious error which probably has no parallel in the annals of American literature appears in all [currently in print] editions of Henry James's novel, *The Ambassadors* . . . : chapters [28] and [29] are in reverse order." So wrote Robert E. Young in an influential 1950 essay, "An Error in *The Ambassadors*." Jerome McGann, a University of Virginia English professor, contends that Young's statement was not true then—but is now.

As the two chapters were arranged in the authoritative New York Edition of 1909, and in the first American edition of 1903, Young pointed out in 1950, the chronological sequence of events seemed "out of joint." For example, in Chapter 28, the reader learns from a conversation between Lambert Strether and Maria Gostrey that Sarah Pocock is leaving that evening for Switzerland; yet in Chapter 29, Strether, in a conversation around midnight "that evening," speaks of his intention of seeing Sarah again before her departure.

The Master himself had proofed, corrected, and revised the text for the New York Edition, as well as for the earlier first American edition. But Young maintained that the involutions of James's prose style in *The Ambassadors* had prevented even the author himself from catch-

ing the error. James biographer Leon Edel defended the Master's prose style but accepted Young's main point—that the order of the two chapters was wrong. Edel noted that an earlier English edition of the novel had the chapters in the reverse order favored by Young. Young's argument prevailed. Today's editions of the novel have the chapters reversed, as they were in the English edition.

But McGann insists that Young failed to recognize that the conversation between Strether and Maria Gostrey, which occupies much of the New York Edition's Chapter 28, was actually a *flash-forward*. When that edition's next chapter opens with a reference to "that evening," McGann says, it is going back to the narrative position of Chapter 28's opening sentences. This arrangement of the chapters, he argues, makes the text more meaningful.

McGann points out that soon after the first English edition came out in 1903, Henry James noted in a letter that there was "a fearful though much patched over fault or weakness in it," which he said no one had noticed and which he did not reveal. When the first American edition came out later that year, the two chapters were reversed. James chose to work from the American edition when he revised the