

Reports of 'nonstranger' rapes draw debate

For the past 19 years, researchers have consistently noted that female rape victims more often report the crime to police if the rapist was a stranger than if a husband, boyfriend, date, or acquaintance committed the offense.

But a major change in that tendency may have emerged in the late 1980s, asserts Ronet Bachman, a sociologist at the Justice Department's Bureau of Justice Statistics in Washington, D.C. Analysis of telephone interviews with a national sample of rape victims indicates that women raped by men they know now seek help from the police as often as those raped by strangers, she says.

Rape reform laws that limit questions about past sexual history at trial, coupled with media coverage of date rape and acquaintance rape, may have helped to weaken the stigma experienced by victims, Bachman contends in the September *CRIMINAL JUSTICE AND BEHAVIOR*.

"Victims of [acquaintance] rapes may no longer be as hesitant to report a rape as they once were," she says.

However, other researchers see flaws in Bachman's study and argue that rape victims who know the offender remain less likely to go to the police.

Bachman bases her conclusions on the responses of 235 adolescent and adult female rape victims who were contacted between 1987 and 1990. These women participated in the National Crime Victimization Survey (NCVS), a twice yearly series of telephone interviews with approximately 68,000 people throughout

the United States. In response to questions about being attacked, threatened, or harmed in the previous six months, women in the sample voluntarily reported a completed or attempted rape.

Altogether, 90 women—or someone in their households—reported a rape to the police. The women failed to report another 117 incidents, and police found out about 28 incidents through other means.

Victims proved significantly more likely to report a rape if the offender had used physical force or if the victim had received medical help for injuries sustained during the rape, a finding that agrees with prior rape studies, Bachman notes. But the number of reports of rapes committed by strangers did not substantially exceed those for rapes committed by men the victims knew.

In addition, rapes committed in the home were reported about as often as rapes committed elsewhere.

Victims with the least education and family income sought police help most often, Bachman says. Those who did not contact police frequently viewed the rape as a personal or private matter, took care of it themselves informally, or believed the police would not help them.

The findings suggest that an increasing number of women understand that "rape is rape," regardless of who commits the crime, Bachman asserts. Further support for this trend comes from data on inmates held for rape in state prisons over the past 10 years, she adds; the proportion of those who knew their victims rose mark-

edly from 1982 to 1991.

Still, the bulk of rape victims in the NCVS sample failed to contact the police. Assurances of confidentiality and anonymity by police may boost rape reports, as might laws that prohibit the media from disclosing rape victims' names and addresses, Bachman says.

R. Barry Ruback, a psychologist at Georgia State University in Atlanta, argues that the small number of women studied by Bachman makes it difficult statistically to detect differences in reporting rates between victims of stranger and nonstranger rapes.

Moreover, federal data gathered over the past 19 years show that police receive substantially more rape reports from victims of strangers, Ruback says. The proportion of women reporting rapes committed by someone they know rose slightly between 1988 and 1991, he notes.

"It is premature to say that the victim-offender relationship does not matter," Ruback asserts. "A more reasonable statement, given available data, would be that this relationship matters less than it did 15 years ago."

Mary P. Koss, a psychologist at the University of Arizona in Tucson, agrees. The NCVS provides a skewed picture of rape because it mainly identifies victims of strangers, although eight out of 10 rapes are committed by someone the victim knows, Koss says. Women in Bachman's sample voluntarily brought up their rapes rather than responded to questions about sexual assault, a strategy that often misses cases of acquaintance rape, especially if a woman answers questions in the presence of the offender, Koss argues. — *B. Bower*

Getting the drift of ocean circulation

Sopping up greenhouse gases and heat from the atmosphere, the world's oceans function as a climatic brake, slowing down the pace of global warming. Just how well this brake works depends on how quickly the oceans stir themselves, a process that carries away materials dissolved at the surface and stores them in deeper water. Results of an experiment in the North Atlantic give oceanographers their first direct measurement of how quickly ocean water mixes in the vertical direction.

To gauge the rate of stirring, an international team pumped 139 kilograms of an inert "tracer" called sulfur hexafluoride into the ocean last May and then tracked its dispersal. The oceanographers released the liquid at a depth of 310 meters, 1,200 kilometers west of the Canary Islands.

The experiment's results confirm suspicions that vertical mixing occurs exceptionally slowly, report James R. Ledwell of the Woods Hole (Mass.) Oceanographic Institution and Andrew

J. Watson and Clifford S. Law of the Plymouth (England) Marine Laboratory. They discuss their work in the Aug. 19 *NATURE*.

Immediately after a first ship injected the tracer, a second ship measured the tracer's concentration in the water and found that the compound formed horizontal streaks with a vertical width of 7 meters. When they returned to the region six months later, the oceanographers located some of the plumes, which had spread very little vertically, measuring only about 18 meters from top to bottom. A year after the initial release, the height of the plumes had reached roughly 30 meters, says Watson.

The tracer spread so slowly in the vertical dimension because water density increases with depth, inhibiting mixing of different layers. Instead of crossing these density surfaces, water moves far more readily along the plane of a single layer. Such density surfaces are inclined rather than horizontal because of the forces induced by Earth's

spin. Water can therefore rise and sink by moving along one of the sloping density layers.

The findings of the tracer experiment show how water moves in the upper kilometer of the ocean, which not only affects greenhouse gases but also controls the movement of nutrients. Researchers are now considering conducting a similar experiment for the deep ocean, at depths of 3,000 to 4,000 meters.

Chris Garrett, a physical oceanographer at the University of Victoria in British Columbia, says the results of the recent experiment will attract attention because they provide solid proof that water does not flow readily across density layers. Less direct tests in the last few years have suggested similar conclusions, but they did not resolve the issue. "What the [tracer] experiment does very nicely is it allows us to uncross our fingers," says Garrett.

The tracer release operation is only one part of a seven-year international effort called the World Ocean Circulation Experiment, which started in 1990.

— *R. Monastersky*