

behavioral sciences

Mothers and sexual development

Monkeys begin to exhibit sexual behavior well before they reach adulthood at the age of four. Initially, in males, this consists of immature mounts and, by the first year of life, mounts similar to those typical of adult males. During the first year, also, males develop a marked preference for a female sex partner. This normal sexual development is largely due to the close attendance of the mother during childhood, say Robert W. Goy, Kim Wallen and David Goldfoot of the Wisconsin Regional Primate Research Center.

Young male monkeys separated from their mothers after three months of age, and allowed only limited play with other young monkeys, showed less than normal adult type sexual behavior as juveniles and showed no real preference between male and female sex partners during the first year of life. As adults, only one-third of them copulated successfully. The exact role of the mother in this development is not known but Wallen suggests that perhaps by breaking up conflicts before aggression takes place, the mother inhibits the development of aggressive responses and the development of fear. Without fear the young animals remain open to each other and open to sexual advances. They are thus able to practice and generalize sexual behavior.

Male chauvinist women

Women as well as men hold attitudes toward females that make career achievement more difficult for them. In a study conducted at Connecticut College in New London, 120 women were asked to evaluate competence and probable future success of a group of artists. The researchers, Gail Pheterson, Sara Kiesler and Philip Goldberg, gave each subject a background profile of each artist and showed them an abstract picture. Each profile had two versions that were identical except that in one the artist had a female name and in the other a male name. When the women were told the artist had been awarded prizes, they rated the men and women equally. When they were told the paintings were entries in a contest not yet judged, they rated the males significantly higher—even though the paintings were exactly the same. These results, says Kiesler, indicate that women are biased when they evaluate other women until those women prove themselves.

Extroverts and introverts

Written tests can distinguish extroverts from introverts, but until now very young children could not be objectively tested for these traits. Collin D. Elliott of the University of Manchester in England has developed a method of identifying these types at five years of age.

He studied five-year-old extroverts and introverts who had been so rated by their teachers, and similar ten-year-olds who had been rated subjectively and by personality test. It has been suggested that extroverts have a higher level of cortical excitation and that they therefore need a higher level of sensory input than introverts to achieve the same subjective intensity. Elliott therefore subjected each child to white noise (a mixture of audible frequencies) that increased in intensity until the child pressed a button. As expected, the noise tolerance of the extroverts was much higher (by 30 decibels) than that of the introverts.

medical sciences

Methadone and biological rhythms

Many of the metabolic activities of man and animals are on a 24-hour (circadian) cycle. Since this cycle is known to alter the effects of some drugs, Robert H. Lenox of Walter Reed General Hospital and Thomas W. Frazier of Behavioral Technology Consultants in Washington decided to see whether heroin addicts being maintained on methadone might be particularly sensitive to methadone at certain times of the day.

The investigators report in the Oct. 13 *NATURE* that the 24-hour cycle can indeed influence the effects of methadone. When rats experienced adverse effects or death from methadone, it was usually at 9 p.m., the onset of their activity period. They appeared to resist adverse effects and death best at 5 a.m., toward the end of their activity period and when their over-all metabolism was in high gear.

The authors conclude that, although caution must be used in extrapolating animal study results to humans, it appears that methadone patients should not take methadone in the morning (the start of their work day), but rather in the afternoon or early evening.

Where tumor antigens come from

Some investigators have suggested that so-called tumor-specific antigens, found in some kinds of human cancers, are not indigenous to tumors. This view sees them as glycoproteins produced elsewhere in the body that just happen to coat tumor cells. If so, then human cancer cells propagated in the lab should not synthesize antigens. In the past, no one has been able to show that cancer cell lines can synthesize the antigens. However, David M. Goldenberg of Temple University in Philadelphia and colleagues at Temple and at Hoffmann-La Roche in Nutley, N.J., now have evidence that they can.

They cultivated human cancer cells for five months. Immunofluorescence techniques showed that the cells were able to produce antigens on their surfaces. Radioimmunoassay showed the cells released antigens into the culture, whereas normal human cells did not.

The authors conclude in the Oct. 11 *NATURE NEW BIOLOGY* that human tumor antigens are indeed synthesized by human tumor cells. Such evidence should help elucidate the mechanisms of cancer. What's more, it is essential if antigens are ever to be used as a clinical diagnosis for cancer.

Prostaglandins go commercial

A remarkable family of natural compounds—the prostaglandins—has emerged in recent years from a scientific curiosity into objects of intense research the world over. Of the 14 prostaglandins so far identified in man, several have been highly effective in clinical studies as drugs to induce labor or therapeutic abortion. They also show promise for treatment of inflammation and blood pressure, ulcers and nasal decongestion.

Now the Upjohn Co., which has been conducting a major international research effort on prostaglandins, has announced the world's first commercially available prostaglandins. Named Prostin E₂ and Prostin F₂-alpha, they have been cleared for sale in Britain. They will be offered by Upjohn to physicians for labor induction and pregnancy termination. While the drugs must be given intravenously, oral dosages are in the hopper.