BEHAVIOR

Sex after 60: Plateaus not valleys

Not only are senior citizens fully capable of a rich sex life, but an individual's level of sexual activity at age 77 is likely to mirror earlier activity, say two Duke University psychologists.

"There are different levels of sexual activity that are characteristic of different cohorts," Linda K. George told SCIENCE NEWS, "but there is a considerable amount of stability of sexual behavior over time for the individual." Most researchers in the past have assumed that both sexual interest and activity gradually decline in the second half of life, a supposition based on single "cross sectional" surveys administered to persons from various age groups. But by sampling the attitudes of persons born many years apart, scientists interested in the effects of aging can color their data inadvertantly with the effects of growing up in different social eras.

To untangle the influences of aging and environment, George and Stephen J. Weiler examined the responses to questions about sexual behavior in surveys completed by 278 married men and women every two years from 1968 to 1974. Persons surveyed ranged in age from 46 to 71 in the first year of the study, spanning what the researchers considered a critical transition period — the years of late middle age when, based on previous studies, sexual activity presumably begins to decline. A majority of the subjects (58 percent) reported exactly the same level of sexual activity on all four test dates, while 20 percent reported a decrease.

"Men were more likely to report stable or increasing sexual activity than their female peers," the researchers report, perhaps because of the tendency for women in the study to marry older men. The results, published in the August ARCHIVES OF GENERAL PSYCHIATRY, reaffirm earlier findings that today's elderly are less sexually active than today's youth, but George and Weiler indicate that pattern may change.

"Our findings suggest that as the number of intact couples surviving to old age increases (as it currently is) there will be concomitant increases in the number of older people reporting continuity in sexual behavior."

Exploring roots of racial prejudice

Racial prejudice prevalent in U. S. prisons may stem as much from social factors like group status, peer acceptance and the cohesiveness of one's social group as from authoritarian personality traits, claim psychiatrists studying young male inmates.

"We're not saying that personality is not a factor," explains Norman I. Dishotsky of Stanford University who, with Adolf Pfefferbaum, studied 350 residents, aged 16 to 21 years, of a California Youth Authority center. "We are saying that if you want to understand the causes of racial tension you have to look at individual environments." The scientists asked five supervisors in the institution to rate each adolescent according to how he related to his own and other ethnic groups. Results showed that white inmates, as a group, showed more hostility toward other ethnic groups than did black or Hispanic youths.

Moreover, "leaders" and "non-leaders" within each group showed distinct patterns of racial hostility. White leaders tended to be more hostile than non-leaders toward other racial groups. Black and Hispanic leaders, on the other hand, were more tolerant of different races than were other members of their ethnic groups. The proportion of blacks and Hispanics in U. S. prisons has risen dramatically in twenty years, contributing to a decline in power and status of white inmates, the researchers suggest. In contrast to both the black and Hispanic groups studied, the white population showed a weak sense of group identity and cohesiveness, report the researchers in the August AMERICAN JOURNAL OF PSYCHIATRY.

PHYSICAL SCIENCES

A hole in the sky

Chicken Little might have been less afraid if she had known. According to a determination recently published in THE ASTROPHYSICAL JOURNAL (Vol. 248, p. L57) there is a hole in the sky. In the direction of the constellation Boötes, the researchers say they have found a "void" about one million cubic megaparsecs in extent that "is nearly devoid of galaxies." (One parsec is 3.86 light-years, a little less than the distance from us to alpha Centauri. So multiply that by a million, cube it, and take a million of those cubes.)

The work was performed by Robert P. Kirshner of the University of Michigan, Augustus Oemler Jr. of Yale University, Paul Schechter of the Harvard-Smithsonian Center for Astrophysics and Kitt Peak National Observatory and Stephen A. Schechtman of Mount Wilson and Las Campanas Observatories.

These observers were conducting a survey of the distribution and density of galaxies and galaxy clusters in different parts of the sky when they found this void. According to the best available modern cosmology, the universe should be homogeneous; that is, matter should be evenly distributed throughout the volume of the universe. In the beginning this means a smooth distribution of atoms. Later, galaxies form, and then, because of gravity, they cluster together. That process imposes a certain graininess on the distribution of matter, but still the grains should be fairly evenly spread around.

Now there is this large void. It raises interesting questions about the dynamics of the expansion of the universe and of the formation of galaxies and clusters, Kirshner and co-workers conclude, but it is not big enough to shake confidence in the basic principles of big-bang cosmology, including the belief in over-all homogeneity.

Catalyze fusion with fractional charge

Fractional electric charge is an experimental determination that doesn't seem to want to go away. Until a few years ago no body had ever been reported to possess an electric charge amounting to a fraction of the electron's charge. The electron's charge is thus widely believed to be the minimal amount any single particle can have. But in the last few years William Fairbank of Stanford University and his associates have been finding fractional charge on certain small niobium balls.

The explanation might have been easy: free quarks attaching themselves to the balls. The current theory of elementary particles predicts that quarks are the basic building elements of matter and that they have charge in amounts of ⅓ and ⅔ that of the electron. But the theory does not allow quarks to be free; they have to stay bound in structures of unit charge or no net charge.

If not single quarks, why not diquarks? That is the suggestion put forward in the Sept. 28 PHYSICAL REVIEW LETTERS by R. Slansky and T. Goldman of Los Alamos National Laboratory and Gordon L. Shaw of the University of California at Irvine. Diquarks are double quarks, two quarks of the same kind bound together. (The theory now has place for six varieties or "flavors" of quark and six corresponding antiquark flavors.) It is necessary to make a certain break in the symmetry principles governing quark behavior to gain permission for the existence of free diquarks, and Slansky, Goldman and Shaw give a group theoretic discussion to show that this is possible.

Diquark charges would interact somewhat weakly with atomic nuclei. In particular, these theorists say, the diquark made of two antiquarks of the "up" flavor, with a charge of $-\frac{4}{3}$, could be an effective catalyst for the fusion of deuterium and tritium nuclei. These diquarks would thus be very useful for the energy efforts if they could somehow be mined or manufactured.