

## Unhappiness: Closing the generation gap

Twenty years ago, a survey conducted by the University of Michigan's Institute for Social Research found that young persons were clearly more likely than older persons to describe themselves as "very happy"; and the least happy of all were those over 60 years of age. Now, results of a similar ISR survey indicate the gap has narrowed. Elderly persons have shown some slight increase in positiveness, but the primary change seems to have occurred among the younger generation.

The survey offers evidence of "a general decline in professed happiness among American people during the 1960s and early 1970s which was concentrated primarily among the educationally and economically advantaged segments of the population ... and also most prominent in the younger generations," says ISR's Angus Campbell. "The lives of young people lost something in general affective quality in the 1960s and 1970s."

According to the survey, persons younger than 30 are more likely than those of older ages to describe their lives as hard rather than easy, to feel themselves tied down rather than free, to worry about financial and other difficulties and to be concerned that they might have a nervous breakdown. In all of these categories, persons older than 65 appeared more serene and less worried than any of the other age groups.

One explanation for the trend, Campbell says, is that young, well-educated people "are most aware of the flow of current events, positive and negative, and most sensitive to their implications for them ... and their feelings of well-being may be expected to be more responsive to the influence of political and economic trends than those of the rest of the population."

The ISR researchers also found that those under 30 who were surveyed were also less satisfied than older persons with their education and work, marriage, family life and friendships, standard of living, savings, housing, community, neighborhood and country as a whole. And among those younger than 30, those who are unmarried are "consistently less positive in their feelings of well-being than the rest of the age group."

## The era of family violence

Family violence is becoming an area of increasing concern to behavioral scientists — not only because of the immediate, physical threats, but because it has been linked to subsequent episodes of incest, adolescent behavior problems and other incidents of violence. A soon-to-be-released study of 2,143 family members indicates that the magnitude of family violence is far larger than the outbreak of isolated cases of fighting.

The study, done by Murray A. Straus of the University of New Hampshire, reports that, under stressful conditions, 20 of every 100 wives assault their husbands, while about 14 of every 100 husbands assault their wives. Under low stress, though, the assault rate for husbands is about twice that for wives, although it is below 5 percent in each case. "It seems that in the absence of stress women are less violent to their spouses than are men, but under stressful conditions, women are more violent," says Straus.

Looking specifically at reactions to just economic and occupational stress, Straus and his colleagues find the rate of assaults by wives jumps to 40 percent, and that for husbands rises slightly, to about 16 percent.

Among the many other results, the researchers report that men who beat their wives: were reared by fathers who believed in physical punishment, believe that physical punishment of children and slapping a spouse are appropriate behaviors, do not consider marriage an important or rewarding part of their life, believe the husband should be the dominant person in a marriage and tend not to participate in outside social activities.

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## Gasification's toxic tar products

Scientists at Research Triangle Institute in North Carolina have found that individual organic fractions of tars, produced as a byproduct in coal gasification, appear to be more mutagenic and appear to be more lethal to cultured mammalian cells than studies of the tars alone had indicated. In fact, according to RTI researchers, these fractions appear to be the most biologically hazardous pollutants associated with coal gasification.

It's an important finding, says RTI biochemist Alan Kolber, because the body will fractionate coal tar that is ingested or applied to the skin.

Polynuclear aromatic hydrocarbons and high-pH fractions known as organic bases are among the highly toxic constituents found in coal tars, particularly those produced in the gasification of high-volatile eastern coals. Mutagenicity was measured using bacterial experiments known as the Ames test (SN: 7/21/79, p.48). This test has been widely used as a flag for potential cancer-causing chemicals. On a per-mass basis, RTI tests showed that in some cases total mutagenicity of the chemical fractions of tars exceeded by threefold the mutagenicity of the crude tar alone.

The type and quantity of coal tar produced varies greatly with the coal and gasification process used. Duane Nichols, project leader for RTI's coal-gasification-development project, says that, in general, the higher the temperature used in gasification, the lower the production of waste tars. He adds, however, that one also generally finds that the higher the gasification temperature, the more costly and inefficient the gasification process becomes.

## Engulfing toxic wastes in brine

While sampling sea-floor sediment in the Gulf of Mexico's Orca Basin—one of the largest on the continental slope off Texas and Louisiana—B. J. Presley and colleagues from Texas A&M University identified a growing brine reservoir. Blanketing an area measuring about 40 square miles, the 600- to 700-foot-thick briny layer is devoid of oxygen and 10 times saltier than surrounding water. Presley says it could prove a safe spot in which to dump highly toxic industrial wastes since it's already lethal to all sea life but sulfate-reducing bacteria.

A mile beneath the Gulf surface, this hypersaline reservoir appears to be a unique oceanographic phenomenon, Presley says. Slowly fed by a salt deposit along the side of the basin, saturated sea water eventually flows down to cover the lowest spot on the ocean floor.

The density differential virtually prohibits any mixing between the blanket and adjacent water, something Presley claims is quite rare for the ocean environment. Although the region is "geographically active," as measured on a time frame of 50,000 to several hundred thousand years, Presley says that from a human perspective it is still remarkably stable and could remain immobile for another 50,000 years or more.

## Yellowstone geysers imperiled?

Developers' hopes of drilling geothermal wells in the Island Park Geothermal Area are dimming, according to High Country News. The Interior Department will permit no projects that threaten thermal features at Yellowstone National Park, and a recent study by University of Wyoming geologist Ron Marrs hints at signs of just that. Using infrared imagery and other remote-sensing techniques, Marrs found what appears to be a series of fault lines radiating from Yellowstone toward IPGA. It is feared that if they are conduits for hydrothermal water and connect with IPGA faults, power tapped from IPGA might come at Old Faithful's expense.

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