

female wore ill-fitting clothes and a wig. Theatrical makeup was used to produce shadows under her eyes, skin blemishes and a thick nose. Occupational status (medical student or coffee-shop waitress) were used to indicate "intelligence."

Beauty seemed to gain the most extensive positive reactions from the subjects. The male with the attractive partner was said to have both positive external qualities (likeable, physically attractive, friendly) and internal qualities (talented, intelligent, self-confident). The male with the intelligent partner was rated as having only positive internal qualities, but not all the other things necessary to gain a beautiful partner.

Benefits of napping

Dozing off in the afternoon may seem a humble pastime, but the nap has earned its place in history by apparently allowing some famous people—including Edison and Churchill—to endure long periods of sustained effort with little sleep. What naps could or should do for the average person remains uncertain, but two studies raise intriguing possibilities.

Sleep researchers at the University of Pennsylvania discovered that nappers seem to have more voluntary control over the sleep process. These are the people who can fall asleep on trains and planes and are less likely to have insomnia during periods of stress. While nappers generally require more sleep than non-nappers, they apparently obtain it more efficiently and take less time to fall asleep at night. When asked how they feel after a nap, those people who nap regularly, even when they are not tired, reported the most benefits.

A study conducted at the Naval Health Research Center focused on the question of what happens when a regimen of forced napping, without regular sleep, is imposed for a couple of days. Researchers found that on a schedule of two hour's activity, followed by one hour's nap, subjects actually slept less than half the allotted time. Also, the pattern of sleep during the naps was fundamentally different than during the first hour of normal sleep with the time required to reach the deepest (REM) stage of sleep markedly reduced. Though the nappers showed some increased sleepiness and impairment of memory, they scored well on other performance tests, while subjects deprived of all sleep for the same period showed significant impairment on seven of eight tests.

Who is androgynous?

Some psychologists argue that in a world where more women are choosing to work and more men are feeling the pressure of the "rat race," new norms of masculinity and femininity need to be developed. The term given to the combination of both traits is "androgyny" (SN: 4/26/74, p. 274), and its advocates say that androgynous women are better prepared to face life outside the home, while androgynous men benefit from the softening effects of such interests as child-care.

One study, conducted by a team from the University of Kentucky, compared the sex-type characteristics of some Midwest high school students to their styles in dealing with other people. Androgynous students of both sexes tended to be "friendly-dominant" in their relationships, while masculine-typed students were "hostile-dominant" and feminine-typed students were "friendly-submissive." Students with low scores in both sex-types were "hostile-submissive." A survey of sports figures conducted by Mary E. Duquin of the University of Pittsburgh showed that professional sports attract androgynous women, but highly masculine-stereotyped men.

BIOMEDICINE

How smoking triggers heart disease

Slowly but surely, researchers are learning how smoking contributes to heart disease. Carbon monoxide in cigarette smoke, for example, is known to promote the development of hardening of the arteries and to decrease the delivery of oxygen to the heart. Nicotine has been shown to increase blood pressure, presumably by stimulating sympathetic nerves—those nerves of the involuntary nervous system that make the nerve transmitter norepinephrine.

Cigarettes' ability to trigger high blood pressure via sympathetic nerves has now been demonstrated more directly than ever before by Phillip E. Cryer and his team at Washington University School of Medicine. Using a recently developed radioactive tracer for neurotransmitters, they showed that norepinephrine rises in the bloodstream 10 minutes after people smoke.

A rise in blood pressure preceded a rise of norepinephrine in their blood, however. So it is probably norepinephrine released in heart and other tissues, rather than norepinephrine released into the bloodstream, that triggers high blood pressure, the researchers conclude in the Sept. 9 *NEW ENGLAND JOURNAL OF MEDICINE*.

DNA polymerase and aging

Although the cause of aging continues to be as elusive as Ponce de Leon's fountain of youth, researchers are at least pinpointing some of the possible contributors—a loss of DNA, a decrease in protein synthesis, a decline in the immune system, a decrease in hormones. Now one more is added by Stuart Linn and his colleagues at the National Institute for Medical Research in London—a failure of an enzyme that helps make DNA molecules.

DNA polymerase fails to incorporate the proper nucleotides into DNA in aging human cells, the researchers report in the August *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES*. The general error theory of cellular aging, they explain, proposes that once errors in proteins or DNA begin to accumulate, there will be a progressive breakdown in information transfer between macromolecules, which will eventually upset a wide range of cellular components and in turn harm tissues, organs and systems in the body.

Immunizing mosquitoes against malaria

Until now, efforts to make a malaria vaccine have mostly focused on keeping the malarial parasite transmitted by a mosquito bite from infecting the human host. But making such a vaccine has proved difficult. Several scientists at the National Institute of Allergy and Infectious Diseases are taking another tack: immunizing mosquitoes against malaria-infected people in hopes of thwarting the transmission of malarial parasites to mosquitoes and back to people.

R.W. Gwadz found that the infectivity of malarious chickens to mosquitoes can be greatly reduced by prior vaccination with irradiated blood infected with a malaria parasite. Specifically, the vaccine reduced the development of malarial parasites in the mosquitoes by 95 to 98 percent. Then Richard Carter and David H. Chen made a vaccine of partially purified eggs of the malaria parasite. This vaccine reduces the infectivity of malarious chickens to mosquitoes by 99 percent below control levels.

The next step, Carter and Chen explain in the Sept. 2 *NATURE*, will be to show that such a vaccine can also block the transmission of parasites that cause human malaria.