

BEHAVIOR

Sexual differences in the brain

The hemispheres of the brain are believed to differ with regard to spatial and verbal abilities. Now, researchers are finding what appear to be sex differences in this hemispheric specialization. In boys, the right hemisphere has the dominant role in processing nonlinguistic spatial information by at least age six. In girls, the right hemisphere does not seem to achieve this dominance until adolescence. These are the findings of Sandra F. Witelson of McMaster University in Hamilton, Ont. She tested 25 subjects of each sex within each two-year interval from 6 to 13 years of age. The test consisted of examining simultaneously with the fingers of each hand two meaningless shapes that were kept out of sight. Subjects were then asked to identify the shapes from a visual display of six similar shapes. Results of the test are in the July 30 *SCIENCE*.

Boys, but not girls, obtained greater left- than right-hand scores, indicating right hemisphere specialization for spatial tasks. There was no difference between the hands for the girls, indicating no specialization, up to age 13. Witelson suggests that the same neural structures in males and females may have different functions with respect to at least one aspect of cognition during a major period of development.

If such a difference does exist, it could explain why males tend to out-perform females on some tests of spatial ability. On the other hand, if the female brain does not specialize until adolescence, females may be at an advantage in several ways. The brains of young females, particularly the right hemisphere, may have greater plasticity for a longer period than males. If so, language functions could transfer more easily to the right hemisphere following early damage to the left hemisphere. Such plasticity in females could explain why males have a higher incidence of development language problems (dyslexia, aphasia).

The odds on gambling

Almost two out of three people in the United States placed some kind of bet in 1974. Most did so in order "to have a good time," "to pass the time," "to be challenged" or "to make money." These gamblers ended up wagering more than \$22 billion on commercial games. If gambling were legalized, tax revenues from such wagering would come to more than \$8 billion (only \$1.2 billion is now being realized). These are among the findings of a survey conducted by the University of Michigan's Institute for Social Research. The survey was conducted in the summer of 1975 at the request of a joint congressional commission. The object was to determine the social consequences of changes in gambling laws.

When respondents were asked about legalization, 80 percent favored having some form of legal gambling, but there was so little consensus on which game should be legal that no game was favored by a majority. Bingo headed the list, followed closely by horse tracks and state lotteries. The survey also found that legal gambling seems to stimulate illegal gambling, but in a state like Nevada where almost all forms of gambling are legal, only 4 percent of the population gambles illegally (compared with 11 percent nationally).

When the social effects of gambling were examined, the survey found that gambling was related to marital problems, job dissatisfaction and alcohol consumption, but the researchers were careful to point out that gambling may be the effect of these problems and not the cause. Who would utilize legal gambling? A larger proportion of rich people gamble, and high-income gamblers bet more than those with low incomes, but the proportion of income devoted to gambling tends to decline as income rises. For this reason, taxes on gambling fall most heavily on poor people.

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ENVIRONMENT

Planning together

During the next 20 years, roughly two billion people will be added to the world's already overcrowded cities. "If nothing is done, these towns will evolve into enormous slums. At best, they can be a much improved slum." So says Adolf Ciborowski, deputy director of the United Nations Center for Housing, Building and Planning, in an interview distributed by UNESCO Features. He offers some suggestions for making the best of a poor situation.

Ciborowski has unique experience to prepare him to give advice on how to rebuild cities on a massive scale: He was the chief architect of Warsaw after World War II, and he later planned the rebuilding of earthquake-ravaged Skopje and Managua. He emphasizes the need for planners to consult the people they are trying to serve and the need for even slum dwellers to have some sort of land tenure security.

To overcome lack of understanding of the problems involved in urban planning, and to counter occasional hostility, he says planners must be careful to educate the townspeople involved. Usually people need little encouragement to respond; more than 65 percent of Skopje's citizens visited an exhibition of highly technical designs and models of their future city.

The problems of slums, particularly in Third World countries, Ciborowski says, are compounded by the lack of incentive their dwellers have to improve the facilities. In many cases the inhabitants do not own the land and can be thrown out on a moment's notice. Given some security, however, even desperately poor people immediately begin to improve their settlements, he says. "They produce their own building materials, start bettering their homes; they talk about paving the streets and may even organize themselves into a kind of cooperative. But they won't do this unless they have security."

Cities of the future

The July issue of *IEEE SPECTRUM* is devoted to a series of articles on cities in the 21st century. Some gleanings:

- "Megastructures"—units of tens of thousands of people under one roof—may bring people and their jobs together again. The dangers include possibility of creating unsightly "urban canyons" and structures that lack the flexibility to meet unforeseen future needs.

- The logical extreme of such "maximum density" cities may be seen in the vision of architect Paolo Soleri. He foresees "archologies"—entire cities concentrated into one three-dimensional structure—blending the values of architecture and ecology.

- Less radical would be the creation of smaller urban centers strung together by high-speed transit, arranged in a circle about a nature preserve. Despite the greater distances some people might have to travel, Toroid City would supposedly save large amounts of energy, compared with conventional cities—most of it in the transportation sector.

- Some experts think that the amount of urban planning needed to bring about the previous, ambitious schemes is not likely to be accepted by Americans. If so, the new cities now growing so quickly along the U.S. "Sun Belt" will soon reach the territorial limits and saturated economies of today's older, northern cities, and themselves begin to decay.

- Transportation and communication will be keys to the new cities, whatever their form. One big question for transportation experts is whether giant subway systems like BART and Washington's Metro have priced themselves out of business, and whether "light rail" trolleys may again become desirable. If telecommunications become cheap enough, with fast data transmission, many people might move back to the country.

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