

Lingering hues orient perception

What you see is not always what you get. Consider the case of a 36-year-old woman who suffered irreversible damage to much of her primary visual cortex, a 2-millimeter-thick swath of cells at the back of the brain that processes information taken in by the eyes. Although the woman consistently errs in describing the orientation of objects — such as whether a rectangular block lies horizontally or vertically — Canadian psychologists find that her visual cortex nonetheless makes accurate orientational distinctions that lie outside her conscious awareness. This helps explain why she can handily reach out and grasp a block despite her reported confusion about its orientation, maintain G. Keith Humphrey of the University of Western Ontario in London and his colleagues.

Humphrey's group tested the brain-damaged woman's unconscious perception of orientation by charting her reports of colors that linger after focusing on red and green patterns oriented in different directions. Psychologists have long noted this effect in people with normal vision. In one test, the woman — whose color perception remained normal — viewed two patterns that alternated every 10 seconds for 10 minutes: a circle composed of green and black vertical grates, and a circle composed of red and black horizontal grates. After a five-minute break, she looked at circles with a mix of black and white vertical grates and black and white horizontal grates. The woman reported seeing horizontal white grates as green, and vertical white grates as pink. When the experimenters rotated the circles so that the grates slanted to the left or right, the colors faded to white.

Healthy brains may employ one anatomical mechanism to assess unconsciously the orientation of objects, such as the alignment of a block or grate, and another to make conscious judgments concerning orientation, the researchers propose in the just-received September *PSYCHOLOGICAL SCIENCE*.

Mental disorders more likely in jail

A recent study of Chicago inmates indicated that schizophrenia, severe depression and mania occur up to three times as often among men in urban jails as among men in the population at large (SN: 6/16/90, p.372). Further analysis now reveals that the vast majority of the Chicago inmates with a severe mental illness also suffer from some combination of alcohol abuse, illicit drug abuse and antisocial personality disorder. The latter condition features a long-term pattern of irresponsible, impulsive and violent behavior.

Based on a 1991 United States jail census of more than 395,000 inmates, the Chicago data suggest that nearly 24,000 U.S. inmates currently suffer from a severe mental disorder, maintain Karen M. Abram and Linda A. Teplin of Northwestern University Medical School in Chicago. Of that number, about 17,000 also abuse alcohol or illicit drugs, they assert.

Abram and Teplin derive their estimates from interviews with 728 men sent to the Cook County (Ill.) Department of Corrections between November 1983 and November 1984.

Health care systems must undergo significant change to deal effectively with mentally ill substance abusers, who often get arrested because police officers can find no local mental-health treatment alternatives for them, Abram and Teplin assert in the October *AMERICAN PSYCHOLOGIST*. They offer three suggestions for improving the situation. First, police departments and hospitals should jointly arrange for immediate care and detoxification of mentally ill substance abusers when a police officer brings them to an emergency room. Second, jails and local mental health and substance abuse programs should create or improve links between them. Finally, policymakers should develop community programs that provide long-term psychological and vocational assistance to the mentally ill.

Yo-yo dieters doomed by desserts

If a diet has ever driven you to consider hijacking a dessert cart, take heart. Scientists are starting to investigate such intense cravings. A new study reveals that obese yo-yo dieters, compared with both lean people and obese people having stable weights, prefer sweeter, more fattening foods.

Scientists have yet to find ways to help yo-yo dieters effectively deal with their cake and cookie cravings. However, the new research suggests that taste-preference tests might potentially allow physicians to distinguish subtypes of obesity, which could help them tailor more individualized weight-loss plans for their patients, says Adam Drewnowski of the University of Michigan in Ann Arbor, a coauthor of the study.

The Michigan researchers asked 61 obese and 31 lean adults to sample a series of sugar solutions and mixtures resembling cake icings that contained varying concentrations of butter and sugar. Participants rated the sweetness and acceptability of the "foods" on a nine-point scale.

Overall, the obese and lean groups responded similarly, Drewnowski's team reports in the October *AMERICAN JOURNAL OF CLINICAL NUTRITION*. However, obese subjects with a history of weight fluctuations proved about 15 percent more likely to prefer mixtures with more fat and sugar than obese subjects who maintained stable weights.

Either of two theories might explain the results, Drewnowski says. Perhaps yo-yo dieting creates metabolic changes that caused this group to select increasingly calorie-dense foods—a phenomenon observed in rats. Or the weight-fluctuators may have inherited a taste preference for desserts that predisposes them to weight gain. Other studies have already suggested genetic components for obesity (SN: 11/18/89, p.327).

The difference in taste preferences between weight-stable and weight-fluctuating persons underscores that obesity has complex multiple origins involving both genetic and environmental factors, the researchers say.

Mild exercise may not help hypertension

An occasional power walk may prove relaxing, but people aiming to reduce their blood pressure may need to rev up their exercise program. Although previous studies linked physical fitness to reduced blood pressure (SN: 6/1/91, p.342), a new study suggests that moderate exercise has a negligible effect on mild hypertension.

The four-month investigation involved 99 non-obese, mildly hypertensive men and women, with systolic blood pressures of 140 to 180 millimeters of mercury (mm Hg) and diastolic blood pressures of 90 to 105 mm Hg. Persons assigned to walk 35 minutes three times a week did not significantly lower their blood pressure compared with those who weight-trained several times weekly or did no exercise, according to a report published in the Oct. 16 *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*.

"That was a big surprise," says study director James A. Blumenthal of Duke University in Durham, N.C. His group also did not expect the six- to eight-point average drop in blood pressure measured in all three experimental groups. This across-the-board improvement probably reflects the positive effect of being part of a health study, he says.

The research team took multiple blood pressure readings of study participants in a variety of settings, closely supervised their activities, and evaluated changes in their cardiorespiratory fitness. Walkers who showed the greatest improvement in aerobic fitness also reduced their blood pressure the most.

Blumenthal and his co-workers conclude that more vigorous, frequent exercise might effectively treat mild hypertension, but they discourage physicians from prescribing moderate exercise in place of drug therapy.