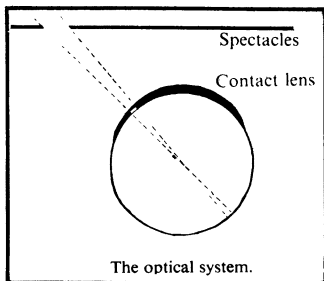


The emotional right hemisphere

The right hemisphere of the brain plays a special role in human emotional responses. This finding was based on studies of lateral eye movement. The direction in which a subject first glances in response to a question is an indication of hemisphere activation, right for the left hemisphere, left for the right (SN: 10/18/75, p. 244). With the aid of a specially designed contact lens, researchers have now allowed subjects to view films with one hemisphere or the other and have additional evidence to support the claim that the hemispheres view the world differently. This work is reported in the June 24 *NATURE* by researchers in Great Britain.

Subjects wore opaque contact lenses which had a small slit for vision. The truncated edge of the lenses rested on the lower lid of the eye and prevented the lens from rotating. Subjects also wore their own spectacles which were blacked out except for a clear slit. In this manner, visual stimulation could be directed to a small area of the retina and confined to one hemisphere or the other. No matter where vision was focused, subjects reported a phenomenon of "centering." The brain, it seems, creates its own center of vision, say the researchers, in spite of the lateral displacement of the image.

Once the subjects were fitted with lenses, they watched several short films and rated each on four dimensions—humorous, pleasant, horrific and unpleasant. There were significant differences between the hemispheres. Subjects who saw the films with the right hemisphere only judged the films to be more unpleasant and horrific than did those who saw the films with the left hemisphere. The researchers conclude, "that each hemisphere has its own distinct emotional vision of the world and that each makes a unique contribution to the whole." Because left hemisphere ratings were close to those made by controls in a free vision condition, the researchers suggest, "it is usually the left hemisphere perception which predominates."



Spring forward, fall on your face

Prolonged isolation, odd working hours and air travel across time zones have been studied and shown to cause behavior changes. No one until now, however, thought to study the effects of daylight-savings-time shifts on human circadian rhythms and observable behavior.

Two British experimental psychologists, Timothy H. Monk and Simon Folkard of the University of Sussex, completed such a study and present the results in the June 24 *NATURE*. They conducted an experiment on 65 people living near Brighton for 6 days before and 11 days after the time shift in the Fall of 1974. Subjects recorded their waking times, oral temperatures, and feelings of alertness during the test.

The time shift had a clear disruptive effect on behavior: Subjects woke up earlier and felt slightly more alert for several days. Temperature changes were more ambiguous; fluctuations may have been due to inclement weather and women's menstrual cycles. Preliminary results also suggest increased traffic accidents.

A shorter adjustment period for just a one-hour time shift would have been predicted by jet-lag studies. The difference, the team states, was perhaps due to the total change in social and physical cues during air travel versus only social cue changes during daylight-savings-time shifts, thus necessitating a longer adjustment period.

'Superrelativistic' quasars again

When examined with radio telescopes, several of the quasars seem to show two components flying apart at high velocity. In a few cases, the velocity appears to exceed that of light. Superluminal velocities would destroy one of the foundation stones of modern physics, so a number of ingenious attempts to explain them away have been put forth. One of the simplest and most appealing of these is the "Christmas-tree effect." It says that what is seen is not motion of two components, but precisely timed flashes of a number of components that give the illusion of such motion.

A blow against the Christmas-tree idea is now struck by 13 astronomers from the United States and Sweden (*ASTROPHYSICAL JOURNAL* 206:L78). For almost four years, they studied the quasar 3C 345, using very-long-baseline interferometry involving antennas in California, Massachusetts, West Virginia and Sweden. The high resolution of the VLBI technique allows them to maintain that the brightness distribution of the source "was clearly dominated by two components" [italics theirs]. They call their result "difficult to reconcile with the so-called Christmas-tree model" but do not drop the other shoe by suggesting an alternate explanation. They leave 3C 345 flying apart at apparently 2.5 times the speed of light.

A strange case of superconductivity

A mixture of a metal alloy and a semiconducting material in a thin film exhibits some strange superconducting properties, including rather high temperatures for the onset of superconductivity, according to a report in the July 5 *PHYSICAL REVIEW LETTERS* by A. K. Ghosh and D. H. Douglass of the University of Rochester.

The mixture contains niobium-germanium alloy (NbGe_2) and semiconducting germanium. Testing various concentrations of the two components, Ghosh and Douglass found some in which superconducting behavior began at temperatures as warm as 16°K. Both the metal alloy and the semiconductor need to be present for high onset temperatures—the range among the samples studied ran from 6°K to 16°K—yet investigation shows the superconducting behavior to be associated only with the metallic alloy. What makes the whole business even stranger is that metallic NbGe_2 is not superconducting by itself above 2.5°K. A third important factor seems to be the temperature of the substrate on which the film is laid by sputtering niobium and germanium. The substrate should be hot (700°C to 850°C).

The experimenters consider a number of possible theories for the phenomenon, but in the end conclude that they have no satisfactory explanation.

A meteorite from an asteroid?

Figuring out the sources of meteorites is difficult because if they have been flying around a long time, their paths are likely to have been altered many times by other bodies. If one that has not been loose long can be found (the age is estimable from cosmic-ray exposure), the path it takes in the earth's atmosphere may give a clue to its orbit and its source.

Such a one is the Farmington meteorite that fell in Kansas in 1890, according to B. J. Levin and A. N. Simonenko of the U.S.S.R. Academy of Sciences and Edward Anders of the University of Chicago. Reconstructing its orbit, they propose in the July *ICARUS*, that it is a fragment of an Apollo asteroid. The meteorite was only 25,000 years old, so its parent should already have been in an earth-crossing orbit when it broke off. Apollo, Hermes and Cerberus are possible matches; Geographos and Toro marginal possibilities, they say.