

# behavioral sciences

*From our reporter at the annual meeting of the American Psychological Association in Montreal*

## **Sprouting in the brain**

Brain damage in which portions of the brain's nervous tissues are destroyed is especially serious because neurons and axons in the brain, once destroyed, do not regenerate. But another type of regrowth does take place. When neurons in one area are destroyed, adjacent neurons have the ability to sprout new axons that enter the vacated areas. This effect, known as sprouting, was thought to be beneficial to recovery from brain damage. But work by Gary Lynch and C. Cotman of the University of California at Irvine suggests that sprouting may actually be detrimental.

Lynch and Cotman studied a relatively simple area of the cat's brain—the dentate gyrus. They removed one particular type of neuron and found that the vacated area was subsequently invaded by sprouts from at least three different neuronal or input systems. They obtained evidence that the new connections are both functional and permanent. In young animals sprouts grow at 30 times the normal rate. "It can be seen," they say, "that brain lesions not only cause an irreversible loss of neural tissue but result in a profound anatomical and physiological reorganization in the circuits related to the damaged area." A behavioral significance of this reorganization is poorly understood, but, says Lynch, such abnormal reorganization could be very harmful.

## **Meditating in prison**

Transcendental meditation (TM) has been found to produce definite physiological changes in respiration, brain wave and heart rate (SN: 4/11/70, p. 370). Just exactly how these changes affect behavior is still not clear but psychologists have found personality differences in persons before and after they began using TM. In one study, prisoners were found to be more sociable after two months of TM. Now David Orme-Johnson of Santa Barbara, Calif., suggests that regular meditation might be useful as a rehabilitative measure in prisons.

A pilot study was conducted at the Federal Correctional Institution in La Tuna, Anthony, N.M. Prior to meditation, volunteer meditators and control subjects took the Minnesota Multiphasic Personality Inventory (MMPI) and were measured for spontaneous galvanic skin responses (GSR). GSR is a measure of the degree of stability of the autonomic nervous system which is correlated to such things as resistance to stress and reduced physical impulsivity. A four-day course in meditation was then given and prisoners were told to meditate for 20 minutes two times a day. After two months all subjects were retested.

Prior to TM all subjects showed similar results on the MMPI and GSR tests. After TM, meditators were found to be less compulsive and more sociable and flexible in their behavior. This, says Orme-Johnson, demonstrates the usefulness of transcendental meditation as a rehabilitative measure and emphasizes the value of regular meditation for maximum effectiveness.

## **Emotion at the fingertip**

Human emotions have two components: an internal or subjective state and an external or physical expression. Because of the complexity of this dual system, measuring and comparing emotions is a tricky business. But Manfred

Clynes of Rockland State Hospital in Orangeburg, N.Y., has developed a testing device that simplifies and standardizes the measurement of emotions.

Anger, for instance, is expressed in many ways but it is not practical to compare one person's hit to another person's kick. To get around this problem, Clynes measures emotion in only one finger. A person is told to think about a specific emotion and express the feeling by pushing a button. The vertical and horizontal components of the finger pressure are fed into a computer. What comes out is a curve that Clynes calls the essential form of a particular emotion. He has found that every emotion (anger, hate, love, grief, sex, joy, etc.) has a specific essential form that is the same in cultures around the world. Clynes has tested people in Bali, Japan and Mexico. In addition to measuring the depth of an emotion, Clynes feels essential forms can be used in a psychoanalytic context to measure personal relationships. "How do you feel about your mother," for instance, produces a different essential form than, "How do you feel about your father."

## **How to select a jury**

An obvious goal for a lawyer at the outset of any trial is to select a sympathetic jury. A psychiatrist's clinical skills and the application of working clinical theory can be very important in the selection, notes Roger Gould of the University of California at Los Angeles. He says selecting a jury can be like conducting a psychiatric interview in public.

Describing the selection of jurors for the Pentagon Papers trial, he listed three types of bias that should be examined in prospective jurors. For example, when asked about the Pentagon Papers, does the juror say "secret documents were stolen" or "some papers were released." The wording can reveal a definite bias about the incident itself. Is the juror against the Vietnam war because it represents criminal carnage or because it represents a waste of money? The answer reveals a motivation bias. A third bias has to do with the method involved. Does the juror agree with Ellsberg's motive but disagree with the method—theft? By analyzing courtroom behavior and background information, a psychiatrist can also get clues to a juror's changeableness and tenacity in the face of pressure. But even with such clues, Gould admits that selection of the Pentagon Papers jury came down to picking the least objectionable persons. No ideal juror could be found.

## **Whom do you like?**

Do similar intellectual and personality types attract or repel each other? They repel, say psychologists David Mettee and John Riskin of the University of Denver. In an experiment pitting pairs of college women against each other on a project ostensibly dealing with educational theory, they found that the competitor who defeated her partner decisively was liked more than the competitor who outperformed her partner by only a narrow margin. In competitive situations, the researchers say, a competitor's pronounced superiority serves to protect a person's self-esteem from severe negative comparisons by rendering such comparisons irrelevant. On the other hand, to be defeated—even marginally—by a competitor perceived to have similar abilities is to have one's self-esteem really threatened. This induces a strong dislike for the person responsible.