

CIA studies fan debate over psi abilities

Scientific debate over the existence of at least some types of paranormal, or psi, phenomena took a strange twist last week. The federal government revealed that it had funded over the past 20 years a \$20 million research effort concerned largely with remote viewing, the alleged ability of some people to visualize hidden or distant locations, objects, or activities.

In the past decade, U.S. military and intelligence officials have consulted a cadre of psychics—including those who participated in the research—on numerous occasions in an effort to

obtain information related to national security issues.

Federal funding of psychic research has now stopped. An evaluation of the project, commissioned by the Central Intelligence Agency and completed in September, concluded that available data do not provide a convincing demonstration of paranormal ability. Even if remote sensing exists, according to the report, it would not prove useful in intelligence gathering.

However, the two researchers who reviewed the secret investigations for the CIA-sponsored evaluation disagree

Hormone triggers cells to turn to fat

Two groups of investigators have discovered a natural hormone that triggers the production of fat cells. While the finding could provide new strategies for the battle of the bulge, understanding the hormone's activities may also lead to new antidiabetes drugs.

The hormone, a type of prostaglandin, stimulates the maturation of so-called stem cells, immature cells that can develop into various cell types. The hormone appears to act as a master fat switch, telling stem cells to become fat cells, or adipocytes, says Bruce M. Spiegelman of the Dana Farber Cancer Institute in Boston.

Two reports in the Dec. 1 *CELL* describe the new findings. One report comes from a collaboration led by Spiegelman and Ronald M. Evans of the Salk Institute for Biological Studies in La Jolla, Calif., the other from a group led by Steven A. Kliewer and Jürgen M. Lehmann of the Glaxo Research Institute in Research Triangle Park, N.C.

The investigators found that the hormone passes through a cell's outer membrane, penetrates deep into the interior, and binds to molecules called PPAR-gamma receptors. These receptors reside in the cell's nucleus, the saclike structure that houses a cell's genetic material. By attaching to PPAR-gamma, the hormone appears to send signals into the nucleus, switching on or off the genes needed to turn a stem cell into a fat cell.

Spiegelman and his colleagues had identified the receptor last year but did not know which of the body's native chemicals activated it. They showed that they had a master switch of adipogenesis, says Spiegelman, but they didn't know how to flip it.

Kliewer suggests that compounds able to prevent the hormone from binding to PPAR-gamma may provide leads for obesity drugs that would stop the body from creating fat. Earlier this year, other investigators found another hormone, leptin, that plays a role in obesity (SN:

12/3/94, p.372).

"This is a nice addition to the obesity story," says C. Ronald Kahn of the Joslin Diabetes Center in Boston. "It is important in understanding and circumventing the pathway to obesity."

Both groups of investigators have also shown that, curiously, a new class of drugs designed to combat one form of diabetes also binds to the PPAR-gamma receptor. The drugs, known as thiazolidinediones, are being tested in clinical trials as a treatment for non-insulin-dependent diabetes mellitus (NIDDM).

In NIDDM, the body produces sufficient insulin, the substance that controls concentrations of glucose in the blood. The body's tissues, however, slowly become resistant to insulin, sending blood glucose concentrations soaring.

Thiazolidinediones have shown great promise in treating NIDDM, but their exact mode of action remains a mystery. "They sensitize the body to insulin, but people had no real idea how they work," says Spiegelman.

NIDDM is generally linked to obesity, so it appears paradoxical that a drug that stimulates the production of fat cells would prove useful in treating diabetes. "You don't treat diabetes by creating more fat cells," says Spiegelman.

Spiegelman suggests that the thiazolidinediones may change patterns of genetic activity in existing fat cells, causing the cells to produce proteins that ameliorate the body's insulin resistance.

Other cells besides adipocytes may also contain the PPAR-gamma receptor, he says. If so, thiazolidinediones may protect by influencing the function of those cells.

Spiegelman and Kliewer agree that having a molecular target for antidiabetes drugs will speed the development of new compounds. In addition, both groups intend to examine relationships between fat storage and glucose regulation.

—L. Seachrist and J. Travis

sharply over how to interpret the findings.

Studies to date indicate that some people exhibit a strong, though far from perfect, capacity for remote viewing or for telepathy, asserts Jessica Utts, a statistician at the University of California, Davis. The brain processes that underlie paranormal skills remain unclear, she adds. "This is a statistically robust effect that, were it not in such an unusual domain, would no longer be questioned as a real phenomenon."

Ray Hyman, a psychologist at the University of Oregon in Eugene, disagrees: "The occurrence of statistical effects does not warrant the conclusion that psychic functioning has been demonstrated."

Researchers don't know why some people in remote viewing studies perform substantially better than would be expected if they simply guessed, he contends.

Both reviewers concentrated on 10 experiments conducted since 1990 at Science Applications International Corporation (SAIC) in Palo Alto, Calif. Utts and Hyman agree that the studies were designed with much better experimental controls than 154 government-funded paranormal experiments performed from 1973 to 1988.

Key SAIC studies included five people identified as experienced remote viewers. These participants tried to describe or draw randomly chosen video clips or photographs displayed in a separate room. In a few trials, another person, known as a sender, looked directly at the target stimulus in an effort to aid remote viewing.

The project director, who did not know which videos or photographs had been shown in specific trials, then rated the similarity of each response to the target display and to four other randomly chosen clips or pictures.

Remote viewers performed moderately better than if they had relied purely on guesswork. Target stimuli that contained strong color contrasts yielded the most accurate verbal and pictorial descriptions, Utts notes.

Such results compare favorably with those from telepathy studies, she asserts, in which a sender concentrates on a video clip or picture, and a receiver sits in another room and later compares images visualized during a trial to the target and to three decoys (SN: 1/29/94, p.68). Four independent projects now indicate that receivers choose the target as being most similar to their visualizations on one out of three trials, a moderate increase over chance.

Telepathy studies also offer no insight into whether a psi effect or something else produces the statistical effects, Hyman argues. Moreover, the SAIC research should have employed independent judges of remote viewers' accuracy and has yet to undergo peer review, he contends.

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