ing. They just made a blanket withdrawal."

Silva summarizes the incident: "Basically, I thought that the whole thing hurt us a heck of a lot more than anybody else, us being the United States and DOD and people in this country who are interested in the kind of information we have." In a letter to SPIE executive director Joseph Yaver, Silva wrote, "We will obey, and want to, the directives of those at the head of our government, but please try to convey to them through the society that there must be a better understanding and more technically competent judgments made, lest they do, as they did in San Diego, incomparably more harm than the imagined good." He adds, "It was done in great haste, and I would hope that they work out a better mechanism, so we know in the future, when we get ready to present some of this information that's important to us, we can do it."

Government officials also reacted to the incident. George A. Keyworth II, presidential science adviser, said he thought the incident was "both unfortunate and ill-timed." He said, "The Defense Department decided to enforce a rule, on the books for some time but generally not enforced, that every paper written with their support had to be cleared formally."

A State Department official noted that only papers from individuals funded by DOD were affected. There was no attempt to review papers from "non-DOD types," he said. A State Department representative, with expertise in both the Department of Commerce's technological export regulations and DOD's areas of concern, attended the SPIE symposium "to ensure that everybody knew what the rules of the game were." The official suggested that DOD's action would not have been "nearly as dismal had there been a better clearance procedure."

Silva is taking his papers through the clearance procedure required by DOD regulations and hopes to present his information at a future meeting. Many of the withheld papers may yet be published by SPIE with the conference proceedings.

Several groups are studying the issue of scientific communication and national security. The National Academy of Sciences panel is set to issue its report at the end of September, several months ahead of schedule (SN: 3/20/82, p. 204; 3/27/82, p. 218). Members of the American Association for the Advancement of Science Committee on Scientific Freedom and Responsibility are concerned that the government is acting before the results of the studies and consultations with DOD are released. Eric Stover says the committee, of the groups working on the issue, has the most up-to-date information. The problem is understanding the extent of the threat and its implications. "We want to be sure before we react," he says. "I think there's going to be a reaffirmation that ... there may be a long-range threat to science."

—I. Peterson

Early signs of schizophrenia

When a schizophrenic sires a child, the child has a one-in-seven chance of eventually becoming psychotic. These well-documented odds have left little doubt about the inheritability of this disabling thought disorder. Nevertheless, scientists have made little progress toward identifying which of these "high risk" children will become sick and which will not; nor have they been able to figure out what it is that, if passed on from parent to child, precipitates a full-blown psychosis. Now scientists have reported some preliminary findings that suggest that high risk children have a slight but fundamental cognitive deficit that could conceivably serve to predict the adult onset of schizophrenia.

Psychiatrist David Friedman and his colleagues at the New York State Psychiatric Institute have studied two samples of high risk children and controls using what are called "evoked potentials" — the measurement of brain electrical activity immediately following a specific sensory stimulus. Friedman asked his subjects to respond to a particular sound, and using an electroencephalogram he studied their brain activity at 300 milliseconds following the stimulus. As reported in the latest SCHIZOPHRENIA BULLETIN, he found that the high risk children showed significantly less brain activity than did normal controls.

Late brain activity (that occurring at 300 milliseconds or more following a stimulus) is associated with a particular stage of information processing that involves the organization and consolidation of information in preparation for decisionmaking, according to Friedman. This measurement is taken primarily from the parietal lobe of the cortex—the "association cortex" — which is involved in the advanced stages of information processing, suggesting that high risk children may have an inherited neuronal deficit in this area of the brain.

Friedman is cautious about interpreting his data. He says that it is possible—even likely — that children at highest risk for psychosis also have deficits in the very early stages of information processing. And he also points out that the cognitive deficit is characteristic of high risk children as a group; it is not yet apparent whether or not such a deficit will identify a sub-group of high risk children who are destined to become adult schizophrenics. He is following his subjects, some of whom are now approaching adulthood, to see if individual cognitive differences are associated with subsequent mental illness. But he does emphasize that the same deficit has been identified in adult schizophrenics; the evoked potential research is rigged to tap a very basic intellectual process, one that, if askew, could lead to a host of problems with learning and routine day-to-day decisionmaking.

The ultimate goal of high risk research is to develop preventive interventions for those who carry schizophrenic genes. But even if such a precise marker of schizophrenic risk can be found, it would at this stage be of limited practical usefulness. Scientists know virtually nothing about how such a subtle difference in normally functioning children could be linked to the development of schizophrenia, which is characterized not only by disorganized thinking but also by delusions, hallucinations, and emotional flatness. It is not even clear whether the disorder follows a natural course of development or whether it is triggered by environmental stress.

Identifying an early marker might, however, lead to a better understanding of how schizophrenia unfolds. One hypothesis, according to Rochester University psychiatrist Rue Cromwell, is that schizophrenics, when they fail to process relevant information in the environment, process irrelevant information instead. He notes that adult schizophrenics have also shown a deficit in the earlier stages of information processing (about 100 milliseconds following a stimulus), when the brain is processing the intensity level of the stimulus; some schizophrenics do not seem able to judge and reduce the intensity of sensory stimulation, and as a result their brains may be overwhelmed by environmental stimuli. Cromwell is studying the prevalence of this early cognitive deficit in schizophrenics and their relatives to see if and how it is passed from parent to child.

—W. Herbert

Spanish panda birth

As the National Zoo in Washington gave up hope of a newborn panda this year, the Madrid zoo got a pleasant surprise — panda twins. The zoo officials had not been certain that their 7-year-old panda was pregnant after artificial insemination with sperm from Chia-Chia, the male panda living at the London Zoo. The smaller of the twins, weighing about 2 ounces, was placed in an incubator and given round-the-clock care, but it soon died of respiratory failure. The mother panda is caring for the first-born and larger (about 3 ounces) of the twins, which the zoo reports is developing normally.

The official 24-hour birth watch of the National Zoo's Ling-Ling (SN: 9/4/82, p. 150) ended Sept. 7, and the panda building was opened to the public once again two days later. Because Ling-Ling still is showing some signs of what zoo officials are now certain is a false pregnancy, an unofficial watch of three to six hours each night is expected to continue for a few weeks. Ling-Ling had been artificially inseminated with sperm from both the Washington zoo's panda Tsing-Tsing and the London panda Chia-Chia. □