

# East Germany: Science in the Disservice of the State

*A secret East German program to perfect steroid drugs for athletes was a full-fledged scientific endeavor*

**Munich**—PREVIOUSLY SECRET EAST GERMAN documents, largely uncovered by a prominent West German molecular biologist, have revealed that a large group of scientists used men, women, and children as human guinea pigs in a state-sponsored research program intended to perfect steroid hormone drugs. The goal was to develop compounds that would boost the performance of East German athletes but prove impossible to detect in the doping tests used at international sporting events.

Although clandestine steroid abuse by top athletes is nothing new in the West, the evidence makes clear that the East German situation was on a completely different level: It was a full-fledged scientific effort—complete with controlled experiments and scientific meetings and seminars—that involved some of East Germany's premier research institutions. Mid-career researchers in the "State Plan 14.25" even wrote their "habilitation" theses—which are required in order to teach in all German universities—on methods of doping athletes and avoiding detection. But unlike conventional theses they were never published; instead, they were kept under lock and key at research institutes participating in the program.

Revelations of scientists' complicity in the effort have proved an embarrassment for the Science Council, which has been struggling to integrate the East German scientific system into a new democratic framework. In the rush to recommend which parts of the old Communist research system should be modernized and which should be abandoned, the council decided that it need assess only scientific competence; it apparently never stopped to consider what science in the service of communism might mean.

"We always assumed," says Dieter Simon, head of the Science Council and director of the Max Planck Institute for European Le-

gal History in Frankfurt, "that natural scientists would turn out to have few skeletons in their closets. I figured that science is just science—how badly could researchers in the natural sciences be twisted? After all," he says, "they were not thinking up legal justifications for shooting people at the Berlin Wall, like their counterparts in the law faculties."

Sadly, Simon and like-thinking West German scientists have had to change their views. "I see I was naive," he says. "Many natural scientists were just as much lackeys of the system as the others were." The steroid scandal, he adds, "goes far beyond just finding a few black sheep."

The information uncovered so far includes dozens of documents detailing what East German researchers did to help the country build

better athletes. The bulk of these documents were ferreted out by Werner Franke, a well-known researcher at the German Cancer Research Center in Heidelberg. Franke's wife, former German discus champion Brigitte Berendonk, has written a book on the steroid program that was published last month (*Doping Dokumente: Von der Forschung zum Betrug*, Springer-Verlag).

The most complete information is contained in two habilitation theses, both of which include diagrams and charts relating the performance of more than 200 athletes to the doses and compounds they were receiving. The overall plan involved half a dozen scientific and sports institutions across East Germany as well as the state-owned pharmaceutical combine Jenapharm and individual university researchers. According to one of the accused researchers, 1000 to 1500 scientists, physicians, and trainers were involved in the program.

Franke came upon the key habilitation theses by following a bizarre trail through eastern Germany. Friends in the east told him about the theses but the library where

they should have been stored simply said they had "disappeared." He tried advertising in newspapers to track them down, but without success. Eventually he came across an East German defector who led him to the Military Medical Academy of the old East German Army—and to the hidden theses and a trove of other material.

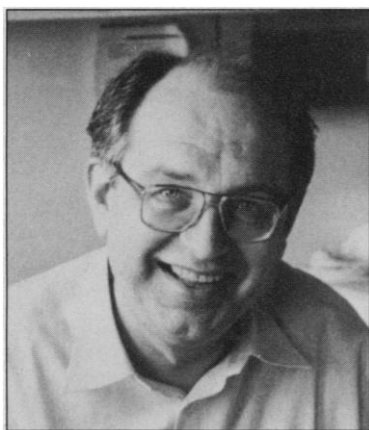
One of the most damning documents is a copy of the minutes of a secret scientific meeting held in 1981 at the Research Institute for Physical Education and Sports in Leipzig. At the meeting a group of 16 biologists, physiologists, and physicians—including several university professors—came up with some novel programs to improve the impact of steroids on athletic achievement while ensuring that their use could not be detected.

Advanced research in endocrinology and hormone chemistry was a key element in several of the projects agreed upon at the meeting. The researchers had realized that the impact of steroids on performance depended on the percentage of steroid receptors occupied on the target organ. The minutes of the meeting show that Professor Rüdiger Häcker, head of the Leipzig institute, took on a project to try to increase receptor occupancy—and thereby boost response to steroids—by modifying the chemical structure of the steroid molecule.

The researchers had also realized that the male hormone testosterone has a double effect: In the long term it increases muscle mass, but in the short term it stimulates production by the brain of other hormones that cause aggressive behavior and can therefore boost athletic performance. So, the minutes of the meeting reveal, the participants were urged to develop a nasal spray emphasizing the psychotropic effects of testosterone, which would act directly on the central nervous system.

The spray was developed over the next few years. In its final version, it incorporated a testosterone precursor that would not be registered by drug tests. Among the athletes on whom it was tried was a promising young swimmer called Raik Hannemann, already a European junior champion. "Like a volcanic eruption," was how Hannemann described the effects of the spray in an article published recently in the newspaper *Berliner Kurier*. According to Hannemann it was mandatory for any athletes who wanted to participate in the 1988 Seoul Olympics, but "it tore up my nasal membranes and made me retch," he said. The side effects were so severe that he could not compete in Seoul. He has now quit international competitive swimming.

Semiannual research reports of the Leipzig institute unearthed by Franke show that the



**Steroid sleuth.** Molecular biologist Werner Franke uncovered the details of the program.

scientists were aware of the risks they took with their subjects' lives. According to these reports, two steroid compounds were administered to sprinter Kerstin Behrendt, a member of the 400-meter relay team that won a silver medal in Seoul, even after it was found that the drugs were damaging her liver. The documents also indicate that Günter Rademacher, a physician at the institute specializing in endocrinology, carried out a long series of controlled trials on 16- to 18-year-old male canoeists and kayakers.

Few of the researchers involved are willing to talk about the program. In a prepared statement to the press, Häcker has admitted a limited role in the steroid program, though he places the blame on high government officials for "pressuring" the scientists into complying. "The government was steadily demanding that we researchers develop and test new and more effective drugs," he said, "and we had no alternative but to comply."

Some of the scientists whom Franke implicated in the steroid program are still in prominent research posts. Michael Oettel is today the director of the Experimental Biology Institute in Jena of the former East German Academy of Sciences. His name appears on the list of attendees at the 1981 meeting, a time when he was research director at Jenapharm, and he has also admitted in writing to Franke that he had made the suggestion for "applying testosterone intranasally." Oettel told *Science* that he considers the allegations against him to be a massive oversimplification and misunderstanding, as well as a case of misplaced responsibility. "It's just like saying, 'Was Heisenberg responsible for the A-bomb, yes or no?'" he said. "That's too simple."

But Oettel is nevertheless deeply troubled by what he did. "I see now that it is difficult to reconcile such behavior with the responsibility of being a scientist," he told *Science*. "My activities weigh heavily on me." Oettel admits that he and other researchers "buried our heads in the sand" when it came to paying attention to what the steroid research was used for. "Our motto was, 'What I don't know can't hurt me,'" he says.

Members of the evaluation committee of the Science Council might almost be accused of the same defect. Early in their evaluation of East German science they were told of potential ethical problems by Franke, but they chose to ignore him. Later, when he announced plans to publish a book on the steroid program with his wife and began placing ads in the newspapers to try to trace the missing theses, he was accused of showmanship. "Although I respect Franke's research as being of the highest caliber," said one commission member who did not want to be named, "I didn't approve

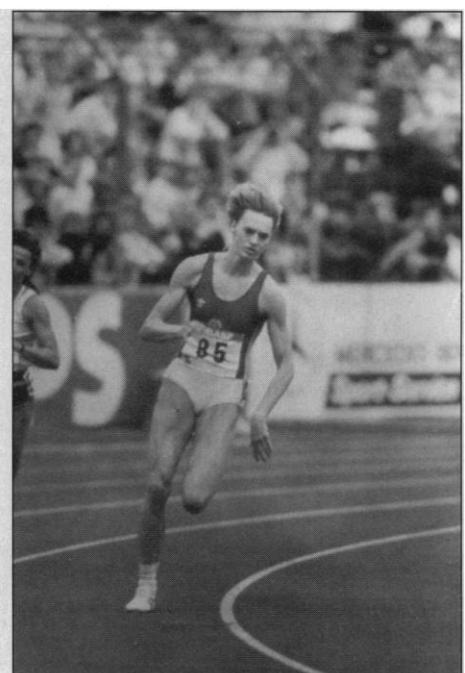
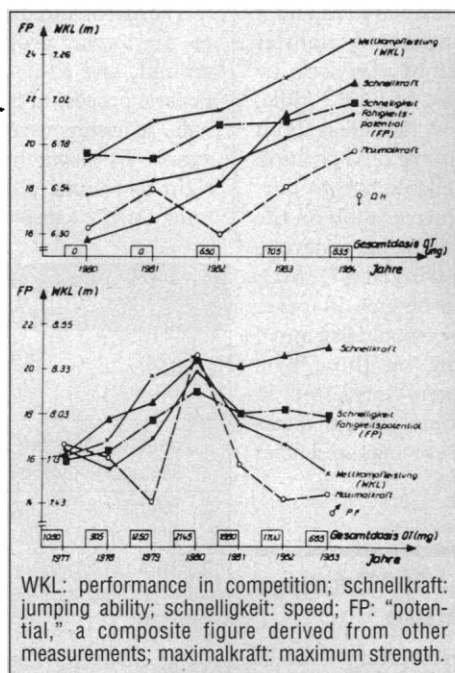
of his style." Others agreed, and in January last year, part way through the evaluation of East German research, Simon told Franke that he must resign from the Science Council. Simon now says he regrets that decision. "I thought he had a personal interest in the issue that biased him," says Simon apologetically. "But now I realize Franke has been wronged—even if he was biased, the facts have borne him out."

The Science Council is in a quandary over what it should do next. Council members claim that they simply do not have the resources to investigate all of the charges of unethical conduct now being brought against scientists who served the East German government. Since their evaluation is

opponent of the Communist regime.

Peter Gutjahr-Löser, chancellor of the University of Leipzig, says that secret schemes like the steroid program present special problems since there is not a lot of public pressure to do something about them until they come to light. "These are the toughest situations," he says.

Some cases have reached the stage where the state prosecutors can take action. In Berlin, the district attorney is investigating three steroid researchers on charges that they conducted experiments using "prohibited compounds" on teenagers who had not given their consent. Similar action is likely to follow soon in other cities according to Ute Fölster, a spokeswoman for the Berlin



**Steroid science.** Charts from a thesis showing athletic performance over time for two athletes. Yearly steroid doses, in milligrams, are given in boxes at bottom of charts. Top chart has been identified as that of long jumper Heike Drechsler (right, 1984 photograph).

already completed, they can argue that it is now up to the universities themselves to evaluate the ethical conduct of potential researchers.

The current plan is for universities to evaluate each applicant from an eastern state twice before he is recommended for a university post: once by a "personnel commission" to determine if he committed criminal acts under the old regime, and once by a scientific commission to determine his scientific competence. Every university employee must also sign a declaration that he did not collaborate with the Stasi, the old East German secret police.

While that should weed out some extreme cases, "No one is asking about ethics," said Lutz Nover of the Institute for Plant Biochemistry in Halle, one of eastern Germany's most successful researchers and a longtime

district attorney's office.

Many scientists expect that more and more cases of unethical conduct will emerge. "You can be sure that there will be a lot of movement [i.e., resignations] in eastern German universities and non-university research institutions in the next couple of years," said Harald zur Hausen, head of the German Cancer Research Center and one of western Germany's most distinguished researchers.

Gutjahr-Löser agrees that the problem is going to drag on. "We'll catch the worst offenders," he says, "but there will be a number of people who get away with it. We'll still be catching up with them 30 years from now."

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