spending, and introduce national health insurance. He encourages Japan and India to join the North American Free Trade Agreement, and he wants Japan to adopt the U.S. dollar as its currency—though it's unclear how his new international currency would fit into that scheme. Running throughout is a call for greater government intervention in the U.S. economy, particularly in the realm of industrial policy, which Prestowitz thinks gets a bad rap in Washington. For American business, his overriding recommendation is "Sell things no one else makes," and he chastises narrow-minded corporate leaders for not considering the national economic interest.

Prestowitz has sounded such alarms before. In his 1988 book *Trading Places,* he argued that Japan had become a juggernaut, a "kind of automatic wealth machine" that could topple the United States from the world's top economic perch. History has not been kind to that prediction. For America's sake, one can only hope that Prestowitz's latest forecast will prove similarly off the mark.

—Carlos Lozada

PERFECT SOLDIERS:
The Hijackers—Who They Were, Why They Did It.
By Terry McDermott. HarperCollins. 330 pp. $25.95

Books about the September 11 terrorist attacks are almost too numerous to count, but *Perfect Soldiers* deserves to stand out. Terry McDermott, a *Los Angeles Times* reporter, may know more than anyone else about the Hamburg-based Islamic extremists who pulled off Al Qaeda's spectacularly successful attack.

The most familiar face among the 19 hijackers, Mohamed el-Amir Atta, is actually the most unknowable of the top organizers. In dramatic contrast to the mean and sour visage in photos from the final years of his life, pictures from his youth show a joyous teenager. He was raised in a solidly middle-class Cairo family, and "forced by his father to leave home and go to Germany" for graduate school in 1992, at age 24.

At Hamburg's Al Quds mosque, Atta and three other principal players grew committed to a Muslim jihad: Marwan al-Shehhi, who flew one plane into the World Trade Center (Atta flew the other); Ziad Jarrah, who piloted the plane that crashed in Pennsylvania; and Ramzi bin al-Shibh, who couldn't get a visa to enter the United States and ended up serving as the plotters' primary overseas contact. McDermott notes that the public expression of radical ideas was "far more common" in big cities "outside the Islamic world than within it." Even so, few could match this quartet's utter preoccupation with the obligations of religious devotion. "It is hard to appreciate how much time these young men spent thinking, talking, arguing, and reading about Islam," he writes. "It became for some of them nearly the only thing they did."

McDermott says that the hijackers' story reflects "the power of belief to remake ordinary men." In no instance was that power more mystifying than in the case of Ziad Jarrah. The son of a secular, middle-class Beirut family, Jarrah, like Atta, came to Germany to pursue his education. In contrast to the aloof Atta, the partygoing Jarrah married a young Turkish woman who had grown up in Germany, and remained devoted to her until he boarded the United Airlines flight on September 11. Jarrah, whom McDermott calls "an unlikely candidate for Islamic warrior," rendezvoused with his wife six times during his final 14 months, while he, Atta, and al-Shehhi were attending flight schools in Florida.

Jarrah kept his real plans from his wife, and McDermott observes that "their relationship survived on her capacity to believe Jarrah's lies, even those that seemed preposterous." Yet on the morning of September 11, Jarrah wrote her a letter that speaks volumes about the dedication of the attackers. "I did what I was supposed to do. You should be very proud of me," he wrote. Their separation would be only temporary, he assured her: When "we see each other again . . . we will live a very nice and eternal life, where there are no problems, and no sorrow." From Jarrah's certainty of a superior future life sprang the ability to sacrifice his present one.

"Al Qaeda was not a slick, professional outfit that didn't get caught because it didn't

make mistakes," McDermott concludes at one point. "It made mistakes all the time. It didn't get caught because the government with which it was dealing made more of them." That analysis is certainly correct, but it's the life stories McDermott recounts, rather than the conclusions he draws from them, that make *Perfect Soldiers* such a memorable book.

—DAVID J. GARROW

SCIENCE & TECHNOLOGY

THE XENO CHRONICLES: Two Years on the Frontier of Medicine Inside Harvard's Transplant Research Lab.
By G. Wayne Miller. PublicAffairs. 233 pp. $26

In olden days, people whose organs failed simply died. Nowadays, they can get replacements from the newly deceased (heart, liver) or the exceptionally generous (kidney). But the organs available are vastly outnumbered by the organs needed. As of late 2004, some 87,000 people were on transplant waiting lists, and thousands of them will die still waiting. One solution seems obvious: organs from animals. It just hasn't worked yet.

The biggest problem in all transplantation is rejection, the immune system's attack on the new organ. In the early 1980s, researchers developed a drug, cyclosporine, that suppresses the immune system. Cyclosporine made human transplantation the relative success it is now, and made xenotransplantation—replacing human organs with animal organs—a real possibility.

The Xeno Chronicles tells the story behind one of the latest techniques in xenotransplantation. David Sachs, an immunologist at Harvard Medical School, genetically engineered miniature pigs to lack the sugar molecules that trigger organ rejection in humans. The pigs were cloned, bred, and eventually killed. In 2003, Sachs's team transplanted a kidney from one of the pigs into a baboon, along with the thymus gland, part of the pig's immune system that could educate the baboon's immune cells to accept the foreign organ. The process was repeated in a handful of other baboons. If it worked, a case could be made for clinical trials in humans.

But within a couple of months, every baboon with a pig kidney died. The cause wasn't always organ rejection; when Sachs's technique outsmarted the baboon's immune system, as it sometimes seemed to do, something else went awry. The drug company backing Sachs eventually grew discouraged, and the National Institutes of Health, which ordinarily funds academic research, doesn't fund much xenotransplantation. So Sachs is more or less out of business and looking for money.

G. Wayne Miller, a *Providence Journal* reporter and the author of six previous books, focuses less on scientific failure than on the research enterprise itself. Besides the Harvard experiments, he writes about the people whose hearts or kidneys have given out, and the ethics of deciding who receives an organ and who doesn't. He details the history of transplantation: the Jazz Age quacks who transplanted monkey testicles into men worried about their sexual abilities; the experimental liver and heart transplants of the 1960s and 1970s, which never worked for long; the golden age of transplantation in the 1990s, when, thanks to cyclosporine, anything seemed possible; and the slow dimming of the promise thereafter. Miller discusses the difficult balance between animal rights and animal testing, and the scientists who care for and soothe, but can't bring themselves to name, the animals they're going to kill in hopes of saving human lives. And he profiles David Sachs, now in his sixties, who's had a superb career but hasn't managed to accomplish what he most wants.

Though surely necessary, all this contextual material isn't presented chronologically or logically; the result is less braid than spotty mosaic. Still, the writing is fluid and fun, and Miller sympathetically portrays a smart scientist who's never going to quit trying. "I can't believe we won't get there," Sachs says. "I just hope it doesn't take longer than I've got."

—ANN FINKBEINER