argue, "without coming close to threatening the R&D budgets of drug companies, much less their economic survival."

Nor are the pharmaceutical industry's R&D resources devoted mostly to scientific discovery, they say. The vast majority of "new" drugs coming to market these days are really just "me-too" drugs—"variations on older drugs already on the market. The few drugs that are truly innovative usually are based on taxpayer-supported research done in nonprofit academic medical centers or at the National Institutes of Health." According to an unpublished NIH document, for instance, only one of the 17 key scientific papers leading to the discovery and development of the antidepressant Prozac and the four other top-selling drugs of 1995 came from the pharmaceutical industry.

Despite the free-market rhetoric the industry uses to fight unwanted government involvement, say Relman and Angell, it is critically dependent on "government-granted monopolies," in the form of patents and Food and Drug Administration (FDA) approval for exclusive marketing. "Stretching that privileged time by a variety of stratagems is arguably the most innovative activity of today's drug companies." In the case of the blockbuster antihistamine Claritin, Schering-Plough won FDA approval last November to change it from a prescription drug to an over-the-counter product, thus preventing generic competitors from jumping into the prescription market when its patent expired in December; meanwhile, the firm pushed prescription Clarinex, a supposed "improvement" that consists, say the authors, of nothing more than "the molecule into which the body converts Claritin, which accounts entirely for the action of the drug."

The pharmaceutical industry "uses its wealth and its political clout to influence all who might check or monitor its activities—including physicians, professional and academic institutions, Congress, and the FDA," say Relman and Angell. The needed reforms—from tightened patent laws to a more aggressive role for physicians' professional organizations in educating their members about drugs—won't come easily.

Fear of Flying?

"Flying and Driving after the September 11 Attacks" by Michael Sivak and Michael J. Flannagan, in *American Scientist* (Jan.–Feb. 2003), P.O. Box 13975, Research Triangle Park, N.C. 27709–3975.

After the terrorist attacks of September 11, 2001, many travelers decided it would be safer to drive to their destinations than to fly. Not a good choice, it turns out.

Driving becomes more dangerous as the miles traveled mount, note Sivak and Flannagan, researchers at the University of Michigan Transportation Research Institute. The risk in flying, in contrast, increases mainly with the number of takeoffs and landings. Out of 7,071 airline fatalities worldwide between 1991 and 2000, 95 percent occurred either during takeoff and ascent or during descent and landing.

Using U.S. National Transportation Safety Board data on domestic flights (including the four in which 232 passengers lost their lives on September 11), the two researchers calculate that the risk of death for airline passengers was about 78.6 in one billion *per nonstop segment traveled*. (The risk roughly doubles when an intermediate stop is added, triples with two such stops, and so on.)

To gauge the risk in driving, the researchers looked at traffic deaths on the very safest roads in America, its rural interstate highways. The resulting risk of death: 4.4 in one billion *per kilometer traveled*.

That means, the authors calculate, that one would have to drive only about 18 kilometers (or 11.2 miles) to equal the risk of flying one nonstop segment on an airliner.

What if September 11 has ushered in a new era of terror in the skies? "For flying to become as risky as driving" during the 10-year period they studied, the authors write, "disastrous airline incidents on the scale of those of September 11th would have had to occur about once a month."