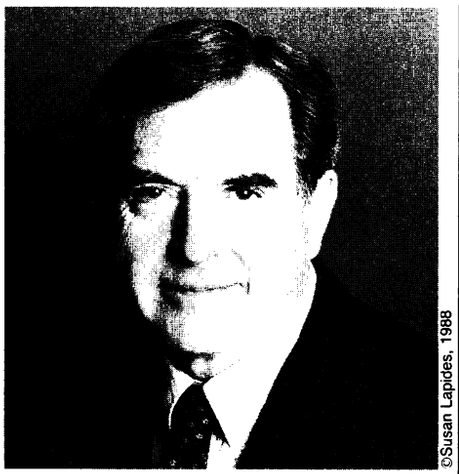

Arnold Relman: *"The reviewing process is not meant to achieve perfection."*

Iain Chalmers (no relation to Thomas) of Radcliffe Infirmary, Oxford, England.

Obstetricians, for example, used to advise women pregnant with twins to confine themselves to bed late in their term to prevent premature delivery. But in 1977, doctors in Zimbabwe concluded after an investigation that bed rest instead caused premature births. They didn't publish the results, however, presumably because they thought journals would not be interested in negative results. But during a visit in 1984, Chalmers learned about the findings and later helped the Zimbabwe doctors publish their results in *Lancet* the next year.

Iain Chalmers has tried to figure out how many negative studies related to perinatal medicine have never been published. But he concluded after an extensive survey in which he wrote letters to more than 42,000 obstetricians and pediatricians in 18 countries, "Trying to flush out unpublished trials retrospectively is fruitless." A better way to track unpublished studies, he said, is to require funding institutions, such as government agencies, to keep a registry of all trials they sponsor from the outset. This would help clinicians monitor negative results as well as minimize unnecessary duplication of research.

Byron Bailey of the University of Texas Medical Branch in Galveston and editor of *Archives of Otolaryngology—Head and Neck Surgery* faulted researchers for publishing the same results in more than one journal. The practice is misleading, and may even constitute infringement of copyright, Bailey and others said. Bailey tracked the authors of papers that appeared in his journal during a 7-year period. Out of 1000 authors chosen at random, 201 published 644 articles that duplicated the original manuscript in some form. Here's what he found: A third of the articles are "similar" to the original article, 40% were based on work that included a few more animals or patients than a prior article, and 20% constituted "salami slicing," in which only a portion of work is written up.

Relman and Angell said in a 4 May editorial in their journal that redundant publication "wastes the resources of the peer review system, including time, energy, and expertise as well as money." It "distorts the reward system in academic medicine. . . . [and] is a way of gaining unearned credit." Authors should submit with their manuscripts all published and unpublished articles that may be overlapping, they said.

At the conclusion of the conference, no one even approached a consensus on anything except perhaps a remark by Sheila Jasanoff of Cornell University, who said, "One shouldn't go away depressed about peer review, but one should go away with more humility about it." It was not clear what kinds of changes, if any, journals are likely to adopt. Rennie, who organized the meeting, which was sponsored by the American Medical Association, put a followup questionnaire in the registration packets to ferret out answers, but doesn't expect to report the findings for a couple of months.

With the Dingell investigation fresh on everyone's mind, Relman, not a reserved personality, argued that there are unreasonable expectations about peer review's ability to catch errors or even outright fraud in a scientific paper. He declared, "I don't like the presumption that there's a Holy Grail, that we are seeking truth. The reviewing process is not meant to achieve perfection, but to improve the quality of a paper and eliminate papers that are demonstrably wrong. We don't ensure accuracy, we try to improve it."

It's "impossible for journal editors to know who's cooking data," Relman said. "If a question is raised, editors have to ensure that the institutional process is followed" to evaluate a researcher's work. "We're all interested in the truth, but it's mostly what happens after publication of a study that determines truth." *Lancet* editor David Sharp remarked, "Peer review is achieved by worldwide publication. Peer scrutiny is the very object of publication."

Lock said peer review "is the best we've got, but it's terribly understudied. If we don't put our house in order, the chaps on Capitol Hill and the House of Commons will."

■ MARJORIE SUN

Space Telescope Delayed (Again)

In the National Aeronautics and Space Administration's ongoing game of musical space shuttles, the Hubble Space Telescope is once again the payload left standing. Last year, concerns about overcrowding the launch schedule led NASA officials to postpone the telescope launch from June 1989 until December 1989. Now, citing the priority of classified Defense Department payloads and the need to keep the Galileo mission on schedule for its autumn lift-off for Jupiter, they are postponing Space Telescope until the spring of 1990.

"Hubble is the payload most affected because it is the one that does not have a time-dependent schedule," explains NASA spokesman Charles Redmond. The revised shuttle manifest is neither definite nor official. But the most talked-about date for launching the telescope is 26 March.

Ironically, Space Telescope is paying the price for NASA's recent success in keeping the Magellan spacecraft on schedule for its 30-day "launch window" to Venus. (The window opened on 28 April; the lift-off came on 4 May.) To accomplish that feat with the limited work force available at the Kennedy Space Center, agency officials had to commandeer as many technicians as they could—even though it meant delaying work on the oldest shuttle orbiter, Columbia, which is undergoing a massive refurbishment to give it some of the technical refinements included in the later orbiters, Discovery and Atlantis, and to bring it up to NASA's post-Challenger safety standards.

But that delay, in turn, meant a slip in launching Columbia's first payload: a classified mission originally scheduled for midsummer. And from there, the slippages propagated. A second summertime Defense Department mission had to be moved until after Galileo, which is pegged to the 12 October opening of its launch window to Jupiter. This started crowding the flight that would retrieve the Long Duration Exposure Facility, a boxcar-sized satellite designed to study how materials fare in the space environment. But that flight cannot wait too long because the facility is rapidly spiraling inward from atmospheric drag. And so it went. The upshot: no Space Telescope for Christmas.

One piece of good news, however: since the telescope is already about as ready for launch as it will ever be, the costs of storing it on the ground should soon start declining from about $8 million per month to about $6 million per month.

■ M. MITCHELL WALDROP