

(both threatening reentry vehicles and non-threatening decoys) is unnecessary. To the extent that information about which objects are decoys is made unavailable, every object in view must be rediscriminated each time a platform is ready to fire at it. For threat clouds containing many more decoys than reentry vehicles, this seems likely to be an enormously time-consuming enterprise, and time is the one commodity in short supply during a large-scale missile attack.

Finally, the Eastport study took to task the critics of SDI software, alleging that their arguments rested on the infeasibility of developing huge amounts of perfect computer code. The critics never made such arguments. Rather, such claims came from proponents such as James Fletcher, who wrote that "Battle management for a multi-layered defense is clearly one of the largest software problems ever tackled, requiring an enormous and error-free program on the order of 10 million lines of code" (1, p. 25).

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REFERENCES

1. J. C. Fletcher, *Issues Sci. Technol.* 1, 15 (Fall 1984).

Response: It is apparent that Lin and Parnas, each according to his own crusade, is "responding" to his own concerns rather than to Waldrop's article or to the Eastport report.

In response to Lin's concern about "deterrence as the primary goal," the word "deterrence" appears only three times in the Eastport report, once in quoting a White House paper and twice in reference to the strategic offense. The Eastport report discusses only technical and management aspects of the Strategic Defense Initiative. It was not our charter to propose national policy. The only mention of national policy in the Eastport report is to acknowledge that the architecture and design of a strategic defense system must conform to national policies as they become established.

The only specific technical point that Lin raises is the 20% multiple shot inefficiency from a "random" allocation of weapons to targets. By some inexplicable logic, incorrect in any case, Lin states that "This result is valid only for a leakage rate of about 70%." A leakage rate of 70% could occur only in an extremely target-rich and weapon-poor circumstance, in which case the chance of more than one weapon shooting at a single target is nearly zero. Also, the weapon allocation discussed in the Eastport report is not "random," but is a comparison of allocation

based on locally available versus global information. The 20% result, which is also sensitive to weapon accuracy, was obtained by several independent simulations and analyses, none of which assumed such large leakage.

Lin suggests that "the Eastport study took to task the critics of SDI software." As Waldrop reported, the panel was not shy about "taking to task" the way in which the Department of Defense procures the design of high-technology weapons. However, the report makes no specific mention of technical critics or criticisms of SDI. Thus the report could hardly be described as "alleging" (Lin) or offering "assertions" (Parnas) about what the SDI critics have been saying. The panel had its own priorities in what to study, and its main conclusions were well summarized in Waldrop's article. *Science* readers will draw their own conclusions about whether the panel's priorities and recommendations make sense.

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Today's Biotechnology

Daniel E. Koshland's invocation to the 13 June Biotechnology Issue (Editorial, p. 1313) introduced a disquieting note. Few knowledgeable scientists would dispute the promise of biotechnology, yet many of us advocate prudence in releasing engineered organisms. The world of Pasteur is long gone. Today's biotechnology researchers have vastly more information upon which to draw; they are far less constrained by equipment, methodology, and speed of communications. But the public that funds their research is anxious about new technologies, with risks that emerge mainly in hindsight, and wants assurances. Unfortunately, given the disparity in funding among the various life sciences, the ability to develop new organisms has outstripped the ability to predict the consequences of their release. Research on these consequences and improved communications among researchers in all the relevant biological disciplines are essential before the public will accept the safety of biotechnology.

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Indirect Costs and Starter Grants

The Policy Forum by R. M. Rosenzweig and P. D. Boyer (20 June, p. 1508) presents helpful views on the difficult issue of indirect costs. One matter that both authors do not discuss is that, in some universities, some of the indirect cost money is recycled to provide starter grants and facilities to new faculty members that provide a basis for winning major research grants or for more established scientists who wish to break new scientific ground. What is to happen to this pool of money in view of changes proposed to fix indirect costs? If the new policy reduces funding available for these starter grants, it could lead to critical shortfalls in scientific research that would be of major significance to the national interest.

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Sheep, Goats, and the History of Psychology

Michael M. Sokal's review (2 May, p. 664) states that familiarity with John M. O'Donnell's 1979 dissertation "The Origins of Behaviorism" has separated the sheep (who actively investigate psychology's past) from the goats (who regularly indoctrinate thousands of undergraduates with its mythology through required "history and systems" courses).

Anyone who has first-hand experience with sheep and goats or who knows about their historical association in biblical times should recognize that Sokal has mixed his species up.

Sheep are far less likely to actively investigate anything than goats, who are cursed for their inquisitiveness and ability to get into places where they are not wanted. By contrast, domesticated sheep seem only to know how to stay in a flock. Sheep are more valuable than goats for their wool and mutton. Goats can, however, serve as useful eyes and brains of the flock. Therefore, before the slaughter it is necessary to separate the sheep from the goats.

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Erratum: In Constance Holden's News & Comment article "Giving mental illness its research due" (30 May, p. 1084), a study by Otto Wahl mentioned at the bottom of column 1 on page 1085 is to be published in the *Journal of Community Psychology*, not the *Journal of Community Psychiatry*, as stated.