ment of drugs and devices. In such a way came the discoveries of x-rays, penicillin, the polio vaccine, and genetic engineering. No industrial organization or philanthropy *had* or *would ever have* the resources or disposition to sustain such costly, long-range, apparently impractical programs. In sharp contrast to the success of investments in basic research are the disappointments in narrowly directed programs, such as the assault on cancer, in which the complexity of the problem far exceeds the essential available knowledge.

The current bipartisan support in Congress of the National Institutes of Health attests to the recognition that the federal support of basic research is a cost-effective investment in the nation's health and economy. I can make a similar case that truly pioneering inventions (for example, the airplane, xerography, the transistor) are the sources of industrial strength. It is an utter illusion to expect that philanthropy and industry will for the foreseeable future do more than catalyze the long-term support of basic science from federal sources.

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Defining Misconduct

In his editorial of 12 July (p. 163) Kenneth J. Ryan indicts the "scientific community" as a whole, saying it "has been reluctant to discourage misconduct and sloppy research" and that "the current research environment seems to foster cynicism about simple virtues such as honesty and fairness." Against this background of harsh pronouncements, Ryan defends his attempt to replace the existing official definition of misconduct (fabrication, falsification, and plagiarism) by his far more sweeping and vague categories of "misappropriation, interference, and misrepresentation."

Because Ryan refers to writings by each of us, we feel it necessary to make clear to readers of *Science* that neither of us endorses this redefinition. Moreover, it should be pointed out that this proposed definition has encountered widespread opposition by thoughtful people and organizations, including the Council of the National Academy of Sciences (CNAS) and the Federation of American Societies for Experimental Biology (FASEB) (*1*). To remain healthy, scientific research must be protected not only from misconduct but also from undue zealotry in expanding the grounds for charging misconduct.

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Notes

1. For recent summaries of the reasons for CNAS and FASEB opposition, see *The Scientist* **10**, 3 (22 July 1996).

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Fowl Call

The caption of the picture (p. 1873) in the item "The tale of a peacock's tail" (Meeting Briefs, 28 June, p. 1872) states, "Computer model finds female peacocks limit time spent on choosing a mate."

No time whatsoever can be so spent. The world lacks female peacocks. There are, however, peahens and peachicks. The picture shows three peafowl—two peacocks and a disinterested peahen who, surely, would take offense at being regarded as a mere "female peacock."

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AIDS Politics

I was amazed but not amused by Jon Cohen's perception of the current state of HIV (human immunodeficiency virus) research (Special report: AIDS, "The changing of the guard," 28 June, p. 1876). For example, the "Heavy hitters 1993–95" list purporting to show the emergence of some new wave is taken from an article entitled, "AIDS: NIH stands out" (*1*). The *Science* list is made up of several individuals who usually, but not invariably, publish as a group. A summary impact score (citation per paper) for these groups would be

Laboratory of Immunoregulation, National Institute of Allergies and Infectious Diseases (Orenstein + Pantaleo + Fauci)	University of Alabama, Birmingham (Shaw + Saag + Hahn)	Aaron Diamond AIDS Res. Ctr. (Ho + Cao + Moore)
73.01	54.51	43.43

and Robert Gallo's figures were not even included in this list. In this case of statistics of scientific esteem, readers should recall a statement paraphrased from Eugene McCarthy on football coaches, that one has to be smart enough to understand the principle, but not smart enough to lose interest.

HIV disease and its ultimate symptom, AIDS, is a tragedy that transcends politics and factions. A proper sociopolitical history of HIV research would reveal that coteries and cabals in this field are neither new nor have they been a particular source of original ideas or novel approaches for dealing with the disease. More important, factionalism is not the best way to produce new scientific concepts but is a symptom of lack of direction. Assigning the categories "old guard" or "new guard" does little for creative unity in disease research, whether they are accurate or not.

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1. *Sci. Watch* **7**, 1 (May/June 1996).

Schrödinger's Cat at Hand

When the Schrödinger cat paradox was first proposed in 1935, it was difficult to envision an experimental system in which to model Schrödinger's experiment. But C. Monroe *et al.* describe such a system in their research article "A 'Schrödinger cat' superposition state of an atom" (24 May, p. 1131). In an accompanying Research News article (24 May, p. 1101), Gary Taubes writes

> . . . Erwin Schrödinger described a cat shut up in what he called a "diabolical device": a closed box also containing a small amount of a radioactive substance. Over the course of an hour, the radioactive substance has a 50–50 chance of decaying. If it does, the decay is detected by a counter, which shatters a flask of deadly acid, killing the cat. If it doesn't, the cat lives.

But for the experiment to be a true paradox, the box must contain only *one* radioactive atom, as specified by Schrödinger. If there are numerous atoms in the box, it is a statistical certainty that at least one atom (but we cannot know which one) will decay in the course of the experiment, and the unfortunate cat will undoubtedly be killed. If, on the other hand, there is only one or very few atoms in the