models are needed to explain the multifarious sets of disparate data. Exclusively sociocultural and economic models will not do the job.

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The advisory group statement comes dangerously close to criticizing free inquiry itself. Scientists often find that the search for truth leads in directions that threaten social consensus. Those who would defend that consensus only betray the weakness of their position when they ignore new discoveries and attack, instead, men and their motives. If Charles Murray and Richard Herrnstein are wrong, let us prove them so. Simply to dismiss them without examining their ideas is the most graceless way of admitting that they may very well be right.

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Publicizing the Value of Basic Research

Bravo, Arthur Kornberg (Editorial, 29 Sept., p. 1799) for telling it like it is! The current fad of supporting "strategic basic research" and "targeted basic research," accompanied by severe cuts in research, affects not only the biological, but all sciences across the board.

As scientists, we owe it to ourselves, and even more to the future generations of scientists (our scientific children and grandchildren), to keep the flame of science burning as brightly as we can, but there is one element of the story that should not be neglected. Past experience lets us predict with some confidence that a breakthrough in some field will be made in the next few years in some country that is "prepared" for it. Imagine the public outcry if another country were to secure the basic rights to a new discovery that revolutionizes communication technology, or biotechnology (cure for AIDS or cancer), because they have kept active basic research programs, while we have not.

The AAAS, as the umbrella scientific society in the United States, should take an increasingly active role in publicizing to the American public the future dangers in the long term from cutting our national investment in basic research. With enough (and continued) publicity, the downward trend might be stopped.

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Bullets and Silk in the Old West

The Perspective "Putting a new spin on spider silk" by David A. Tirrell (5 Jan., p. 39) concerning the structure of spider dragline silk points out that the properties of spider silk have been known for nearly a century. Considerable interest in the material has been generated by the demonstration that spider dragline silk is one of the strongest fibers known. However, the similarly remarkable properties of silkworm silk, in particular its resistance to rupture by bullets, have been known for more than a century in the United States. An early pub-

lished report of the properties of silk in this regard was in 1887 by George E. Goodfellow, renowned surgeon, expert on gunshot wounds, and citizen of Tombstone, Arizona Territory (*1*). He wrote, "A somewhat extensive experience in the gunshot wounds of civil life, during the past few years, has brought to my attention the following instances illustrative of the remarkable tenacity of silk fibre and its resistance to the penetrative power of a bullet." The paper then describes three instances of Chinese silk handkerchiefs impeding the progress of bullets through the bodies of the wearers.

In the first case, occurring in the spring of 1881, the doctor observed a lethal quarrel from a distance of "a few feet." The first shot fired struck one of the men in the left breast. "The ball came from a cut-off Colt 45-calibre revolver, fired at a distance of six feet, the cartridge of which contains thirty grains of powder and two hundred and sixty grains of lead." An examination of the wound by Goodfellow showed that a silk handkerchief worn in the coat pocket was protruding from the entrance wound. When pulled from the wound, the bullet was found lying in the folds of the silk with two thicknesses of silk covering the bullet. Subsequent experiments using identical loads and a 4-inch-thick pine board demonstrated that the bullet should easily have passed through the victim's body. Goodfellow then detailed even more remarkable cases to demonstrate the unusual properties that we now know characterize silk fibers in general.

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1. G. E. Goodfellow, "Notes on the Impenetrability of Silk to Bullets," *Southern California Practitioner, II*, 95 (March, 1887).

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Climate Change and Consensus

I attended the recent Madrid and Rome meetings of the United Nations–sponsored Intergovernmental Panel on Climate Change (IPCC) on behalf of The Science & Environmental Policy Project, a nonprofit, nonpartisan research group. We wanted to document how the nearly 200 governmental delegates from some 120 nations went about fashioning a summary from an underlying scientific report prepared by mainly Western academic scientists. The impression I gained is rather different from the one projected by Richard A. Kerr ("It's official: First glimmer of greenhouse warming seen," News, 8 Dec., p. 1565).

The IPCC summary report (*1*) presents selected facts and omits important information:

- The summary (correctly) reports that climate has warmed by 0.3° to 0.6°C in the last 100 years, but does not mention that there has been little warming if any (depending on whose compilation is used) in the last 50 years, during which time some 80% of greenhouse gases were added to the atmosphere. The summary does not mention that the satellite data—the only truly global measurements, available since 1979—show no warming at all, but actually a slight cooling, although this is compatible with a zero trend.

This negative result from the real atmosphere should be compared with what climate models predict: A "best" warming rate of 0.3°C per decade, according to IPCC's 1992 summary—newly reduced to 0.2°C per decade in the 1995 summary. With climate models lacking validation, why then should we trust any of the forecasts about future warming, sea level rise, and other claimed impacts—or use them as the basis for costly policies?