that Earth receives from the Sun. That is probably less important than a comment I recently received from David Pimentel, a global agricultural scientist at Cornell University. Pimentel said that we humans currently appropriate for our own use about half of Earth's net primary production of biomass.

Arthur Smith suggests that "the only way population will decrease sufficiently in coming decades is with a . . . dramatic increase in death rate." There is evidence to the contrary. Fertility rates have dropped dramatically in many parts of the world, and much of Europe is at or near zero population growth.

Smith identifies the problems that must be addressed if nuclear power is to be expanded. In addition there is a political problem, if the citizens of all 50 states vote to prohibit the storage of nuclear waste in their respective states.

I agree with Smith that taxes on energy are needed to reduce consumption and to fund the needed large increases in research on renewable energy. A good first step would be to change the gasoline tax to a sales tax so that tax revenues would rise as gasoline prices rise.

Reference

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Proper Citation of the Matthew Effect

In letters to the editor in the January 2005 issue of PHYSICS TODAY (page 15), Sam Silverman and R. Stephen Berry both suggested that crediting the eminent sociologist Robert Merton with the term "Matthew effect" to describe the deplorable practice of scientists giving exclusive credit for a scientific advance to the most distinguished of several equally deserving candidates, might itself be an example of that very effect. They indicated that the usage goes back to the organic chemists Louis and Mary Fieser, more than two decades before the effect was named by Merton.

Thanks to an e-mail from Donald Levy, I can now set the record straight: The sociological priority claim on behalf of the Fiesers is entirely spurious. On page 119 of the 1950 edition of *Organic Chemistry* (Heath), the Fiesers describe an "empirical rule due to Saytzeff": "In dehydration of alcohols, hydrogen is eliminated preferentially from the adjacent carbon atom that is poorer in hydrogen." A footnote cites Matthew 25:29: "but from him that hath not shall be taken away even that which he hath." The term "Matthew effect" is never used, and, more important, the quotation is invoked in a strictly chemical context. It is not used to characterize the social behavior of scientists.

Matthew 25:29, which starts with "To him that hath shall be given," has found many diverse applications over the centuries. It gives, for example, a remarkably succinct characterization of the economic policies of George W. Bush, as Silverman remarked to me in another recent e-mail. But for its application to

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scientific priority, Merton alone continues to deserve exclusive credit.

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CERN's Early History Revisited

As a member of the group of historians charged to write the history of the founding of CERN, John Krige (PHYSICS TODAY, September 2004, page 44) is certainly competent "to read the birth of the laboratory through the lens of US foreign policy." I read his well-written article with great interest. It particularly underlines the important role I. I. Rabi played. As former director general of CERN, I can perhaps add a few comments.

At the 1950 United Nations Educational, Scientific and Cultural Organization (UNESCO) meeting in Florence, Italy, Rabi's initiative was undoubtedly an important milestone in the founding of CERN. However, his declaration essentially summarized the efforts of two earlier initiatives. Several eminent physicists, including Edoardo Amaldi, Pierre Auger, Lew Kowarski, Francis Perrin, and, later, Werner Heisenberg, had recognized that Europe would be competitive in nuclear physics only if the countries joined forces, so the physicists had proposed a European research center.

The other, less well-known initiative came from the political side. One essential driving force was the Swiss writer Denis de Rougemont, who, after spending the World War II years at Princeton University, returned to Europe and founded the Institute of European Culture at Lausanne, Switzerland. French, British, and German politicians met there and proposed the creation of a laboratory where scientists from all of Europe could work peacefully together. De Rougemont told me that he considered himself one of the founding fathers of CERN, and he showed me documented evidence. CERN became the first laboratory founded with the two objectives of promoting science and bringing nations together. The Joint Institute for Nuclear Research in Dubna, Russia, and the synchrotron radiation laboratory SESAME near Amman, Jordan, were modeled after CERN.

Rabi's initiative would hardly have been possible without the considerable preparatory work done before the Florence meeting. Indeed, he deliberately limited his part in CERN's founding to the formulation of the declaration. He later said, "With the adoption of this resolution, I bowed out, since this was to be a European affair."

Another motivation drove Rabi. He considered CERN a peaceful compensation for building the nuclear bomb. This was revealed when I invited him to speak at CERN's 30-year anniversary celebration in 1984. Here are excerpts from his comments:

> CERN was founded less than 10 years after the bomb was made. I feel that the existence of the bomb and its success had a large part in making CERN possible. . . . I am not at all surprised at the great achievements of CERN. I expected that. I was sure that Europe, which was the cradle of science, once brought back into the path, would achieve some very great things. . . . I mentioned Los Alamos and the atomic bomb, which is an expression of the power of [the] personalities [involved]. They are here now before you, and it is important to keep them occupied fulfilling the ideals of science. . . .
>
> I hope that the scientists at CERN will remember that they have other duties than exploring further into particle physics. They represent the combination of centuries and centuries of investigation and study and scholarship to show the power of human spirit. So I appeal to them not to consider themselves as technicians . . . but . . . as guardians of this flame of European unity so that Europe can help preserve the peace of the world.

By bringing together scientists from Europe and the rest of the world, CERN has lived up to this objective better than its founding fathers expected.

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In addition to I. I. Rabi, Edoardo Amaldi also was a significant figure in the founding of CERN.

Amaldi traveled to Cambridge, Massachusetts, in July 1946 to present a paper at a conference. There he met accelerator physicist John