knows what "constructive" means these days.

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Forman's acerbic but perceptive review of *The Flight from Science and Reason* (*1*) may cause some readers to suspect that he is a spokesperson for an evil empire—the Academic Left—that is allegedly in control of most branches of scholarship and has orchestrated the onslaught on science. To the degree that this empire has any basis in reality, however, it owes its viability partly to the indifference of the scientific community. An indifference that, until quite recently, manifested itself by the paucity of dialog and debate between scientists and those social scientists who are characterized in Forman's review as "postmodernists, feminists, relativists . . . [and] social constructivists. . . ."

The lack of substantive dialogue was, in my view, a significant enabling factor in the ascendency of postmodernist ideas about the nature of science during the two decades before 1994. In that year the publication of Gross, Levitt, and Lewis' *Higher Superstition* (*2*) initiated such a dialog, and interest in the issues addressed was subsequently reinforced by *The Flight from Science and Reason.*

I applaud the choice of an historian (and one who is competent to address flaws in the book's arguments) as the reviewer, because his remarks constitute a continuation of the healthy dialog between scientists and social scientists. Whether or not one agrees with Forman's assessment of the book, his comments provide a salutory reminder that such books do not mark the end or even the beginning of the end of the "science wars," but merely the end of the beginning (*pace* Churchill).

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Response: I am sorry that *Science* has chosen not to publish Levitt's letter in full, in the form he kindly communicated it to me. Its readers might then have wondered whether the chief purpose of that letter was to ensure that such discussion as Ziegler calls for will not continue to take place in the pages of *Science*. I am, nonetheless, grateful to *Science* for publishing *this* much of Levitt's letter, for otherwise readers of Trefil's letter would have had no clue that he too writes as one criticized in my review. And I am grateful to Herschbach for making clear to the readers of *Science* that of which Levitt's letter offers no clue, namely, that the volume edited by Gross, Levitt, and Lewis contains more than just Trefil's paper. Although Levitt quotes "in full" my remarks *about* Trefil, he refrains from quoting in full my sentence containing those remarks.

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Curtailing the AIDS Pandemic

The decision not to go forward with phase III efficacy trials of human immunodeficiency virus type-1 (HIV-1) vaccines in the United States in 1994 (Research News, 17 Dec. 1993, p. 1820) was based in part on the paucity of data suggesting that current vaccine candidates would provide sterilizing immunity, as

well as our poor understanding of the immune correlates of protection. We are arguably not now much closer to having either requirement satisfied. Furthermore, trials of simian immunodeficiency virus (SIV) vaccine candidates have generally been disappointing because, when an immunized macaque is challenged by the virus, it will usually become infected, despite eliciting a range of antiviral immune responses. Three recent findings, however, provide a logical basis for cautiously moving toward phase III trials without satisfying the above requirements.

First, virus load in vaccinated and subsequently SIV-infected macaques, when measured, has consistently been reduced relative to that in unvaccinated controls (*1*). Second, a strong correlation has been established between low HIV-1 plasma virus load and long-term survival in humans (*2*). Third, studies of perinatal transmission of HIV-1 (the only form of transmission for which suitable data are available) have shown that low virus load is associated with reduced probability of the virus being transmitted from one individual to another (*3*). Hence, if HIV-1 vaccines succeed in reducing the virus load in humans for extended periods in subsequent infections, then vaccinees, although they may still get infected, may have a delayed onset of AIDS. Indeed, preliminary observations of vaccinated, SIV-infected macaques suggest that they may survive longer than unvaccinated, infected macaques (*4*). Furthermore, the rate of HIV-1 transmission from a vaccinee or an individual with suppressed virus load may be reduced. Such a reduction in infectiousness would slow the rate of spread of the epidemic, with the benefit increasing over time (*5*).

These considerations suggest a series of crucial experiments to assess the viability of a vaccination program with the goal of reducing infectivity. First, there has been limited follow-up in animal vaccine studies after infection occurs; a long-term benefit in survival should be convincingly demonstrated. Second, couples with just one member who is infected with HIV are a valuable group to study; such cohorts should be expanded to provide the statistical power necessary to determine if there is an association between plasma or genital virus load, or both, and rate of sexual transmission. Third, animal model studies that evaluate transmission rates under natural conditions of exposure could be conducted with virus load and vaccination as variables. Fourth, whether vaccination of humans with the current vaccine candidates leads to diminished virus load in subsequently infected individuals needs to be carefully evaluated and confirmed.

More than 90% of HIV-1–infected individuals in the world live in developing countries, where they often cannot afford the current batch of highly active antiretroviral drug therapies that can substantially reduce virus load. Thus, a strong argument may be made for going forward with large-scale vaccination programs if the results of the "crucial experiments" listed above are satisfactory (*6*).

The same line of reasoning suggests that combination drug therapies could mitigate the course of the AIDS epidemic—if these drugs were to be made available worldwide and used appropriately so as to avoid the spread of resistant strains of HIV.

These considerations in no way argue against the pursuit of more effective vaccines than we currently possess. They do argue, however, for more lines of investigation into understanding what might now be achieved.

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6. As with all HIV vaccine programs under consideration, the potential mitigating impact of prolonged infection as well as enhanced risk-taking behaviors in vaccine-treated, at-risk populations must be seriously investigated and weighed.

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Cosmic Age

In his Perspective "Cosmic age controversy is overstated" (16 May, p. 1089), Eric J. Chaisson eloquently presents the recent trend estimating the age of the universe to be about 12 billion years. He also indicates that this age is consistent with an open universe.

Using the average value of the Hubble constant measured by Allan Sandage *et al.* (*1*), $H_0 = 57 \pm 4$ kilometers per second per megaparsec, the age, $t = H_0^{-1}$, is 17 billion years for an open universe, and $t = 2/3\ H_0^{-1}$ is 11.5 billion years for an universe having a critical density. Therefore, the encouraging recent developments firming up the age of the universe to be about 12 billion years are in fact more consistent with the favorite inflationary model of the cosmologists.

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Response: It is generally believed that a universe having a critical density is still "open." Such a universe, indeed favored by cosmic inflation, recedes forevermore—mathematically reaching infinity with a zero velocity. That Bhaumik prefers an age for such a critical-density universe of 11.5 billion years, in contrast to my suggested 12 billion years, is no cause for alarm. In cosmology, 11.5 equals 12.

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ETS1-DNA Binding and Intercalation: Correction

In the article "Intercalation, DNA kinking, and the control of transcription (9 Feb. 1996, p. 778), we reviewed the hypothesis that minor groove intercalation and DNA kinking represented an important mechanism for the control of transcription (*1*). This hypothesis was based on a number of examples of protein-DNA complexes available at the time where this mode of interaction was seen to occur: these comprised complexes of the TATA binding protein (*2*), the HMG-1/2 box proteins SRY (*3*) and LEF (*4*), the PurR repressor (*5*), and ETS1 (*6*). Subsequently, we discovered (*7*) that the original structure of the ETS1-DNA complex (*6*) was in error and that binding of ETS1 to DNA is similar to that of the related transcription factor Pu.1 (*8*) and does not involve intercalation (*7*). Thus, discussions pertaining to the ETS1-DNA complex in our article (*1*) are in error. The other aspects of the article (*1*) are correct, and the conclusions of the article remain unchanged.

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Corrections and Clarifications

In the article "New clues to asthma therapies" by Gretchen Vogel (Research News, 13 June, p. 1643), Stephen Holgate's first name was misspelled (p. 1644).

The credit for the photograph at the top of page 1637 in the article "When a habitat is not a home" (News & Comment, 13 June, p. 1636) should have read, "Sandy Desimone/National Audubon Society."

In the News & Comment article "Hughes network expands by a big leap" by Eliot Marshall (23 May p. 1189), it is stated incorrectly that Simon John is the youngest Howard Hughes Medical Institute investigator.

In the report "Large molecular third-order optical nonlinearities in polarized carotenoids" by S. R. Marder *et al.* (23 May, p. 1233), the first names of several co-authors were incorrect. They should have read, Mireille Blanchard-Desce, Sandra Gilmour, Gerold U. Bublitz, and Steven G. Boxer.

In the Table of Contents for the issue of 9 May (p. 914), the name of the author of the Perspective "Are we seeing global warming?" (p. 914), K. Hasselmann, was misspelled.

Letters to the Editor

Letters may be submitted by e-mail (at science_letters@aaas.org), fax (202-789-4669), or regular mail (*Science*, 1200 New York Avenue, NW, Washington, DC 20005, USA). Letters are not routinely acknowledged. Full addresses, signatures, and daytime phone numbers should be included. Letters should be brief (300 words or less) and may be edited for reasons of clarity or space. They may appear in print and/or on the World Wide Web. Letter writers are not consulted before publication.