Air Pollution and Mortality

In our letter (9 Aug. 1991, p. 606) about the article by Alan J. Krupnick and Paul R. Portney (26 Apr. 1991, p. 522), we pointed out uncertainties in the assignment of effects of mortality due to air pollution on the basis of comparisons among U.S. metropolitan areas (an "ecological" study) by Haluk Özkaynak and George D. Thurston (*1*). Krupnick and Portney agreed with our assessment, but Thurston and Özkaynak (Letters, 24 Jan., p. 382) defend their point estimates. Our basic argument is that uncertainties about magnitude and causal agent are inherent in all ecological studies of this kind. In particular, one of the key findings of Lipfert *et al.* (*2*) was that a slightly superior *t* statistic provided no guarantee that one model (or pollutant) gave a statistically significantly better fit than its competitors. Furthermore, the significance of a variable is not a measure of its relative toxicity. As one attempts to assign costs of pollution damage to particular pollutants, it is important to recognize the poor state of our ability to fix blame. A "winner take all" approach to estimating benefits is inappropriate, given the wide disparities in control costs for equally plausible "responsible" pollutants and the small differences in their performance in alternative regression models.

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REFERENCES

1. H. Özkaynak and G. D. Thurston, *Risk Anal.* **7**, 449 (1987).
2. F. W. Lipfert *et al.*, "A statistical study of the macroepidemiology of air pollution and total mortality" (Report 52122, Brookhaven National Laboratory for the U.S. Department of Energy, Upton, NY, 1988).

Corrections and Clarifications

In Mark R. Patterson's report "A mass transfer explanation of metabolic scaling relations in some aquatic invertebrates and algae" (13 Mar., p. 1421), the formula for the Reynolds number two lines above equation 1 should have read, "$Re = \rho UW/\mu$." In table 2 (p. 1422), the mass exponents for the flat plate of laminar and turbulent flow should have been 0.75 and 0.90, respectively. In the abstract, the range of exponents given in line 6 should have been 0.31 to 1.00.

In the ScienceScope article "Emergency rescue for Soviet germ plasm" (3 Apr., p. 19), samples of germ plasm were incorrectly identified as "ascensions." They are "accessions."