

Board found to have actual merit increased even more rapidly than the total number of claims. Thus, I believe the increase in claims does represent an increase in employer misbehavior regarding unions. White correctly points out that my conclusion is inadequately supported by my evidence, but my conclusion is correct.

I find no evidence that workers resist "the political and other nonwork-related baggage that comes with most union organizations." In addition, I find no evidence that "unionization has fared better in those states where agency shop contracts are not allowed. . . ." Indeed, even if there were such evidence, I would not draw the same inferences as White.

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Acid Rain Report

The recent editorial "Ozone and acid rain" by Philip H. Abelson (9 Oct., p. 141) appears to give a stamp of approval to the Interim Assessment Report of the National Acid Precipitation Assessment Program (NAPAP), while ignoring serious criticisms of the report that have been expressed by numerous scientists (News & Comment, 18 Sept., p. 1404). The report, especially the widely distributed Executive Summary (volume 1), is misleading and minimizes the seriousness of the ecological effects of air pollution. To choose one example, the report used a pH of 5 as an arbitrary definition of lake acidification. Many published studies have shown significant biological damage to lakes that are acidified to pH levels well above 5 [for example (1)], so using a cutoff of pH 5 seriously underestimates the number of lakes suffering damage by acidification. This kind of selective reporting demeans the efforts of the many conscientious researchers sponsored by NAPAP.

Abelson's editorial may also confuse some readers by discussing in a vague manner the role of naturally emitted hydrocarbons in the forest damage process. While it is true that organic volatiles produced by plants can participate in reactions that form airborne oxidants, these oxidants only reach potentially phytotoxic levels because of the presence of anthropogenic pollutants. It is misleading to imply, as Abelson does, that "natural organic chemicals" are responsible for forest damage.

In our view, opinions published in *Science* on issues of national importance should be based on a rigorous evaluation of available

information and should be presented clearly. Abelson's editorial fails on both counts.

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REFERENCES

1. K. H. Mills and D. W. Schindler, *Water Air Soil Pollut.* **30**, 779 (1986).

Increased Energy Efficiency, 1978–1986

U.S. energy data indicate that far more energy is being made available to the American economy through increased energy efficiency than from increased use of nuclear power and coal.

From 1978 to 1986, the official economy [measured by real gross national product (GNP)] grew 19% (1), while energy consumption fell 5%, from 78.1 quads in 1978 to 74.3 quads in 1986 (2). Had U.S. energy efficiency stayed at the 1978 level, the economy would have required 93.1 quads in 1986. Accordingly, improved energy efficiency, measured as the decline in energy per unit of GNP since 1978, contributed 18.8 quads to the U.S. economy in 1986 (1 quad equals 10^{15} Btu's; 1 quad per year equals approximately 500,000 barrels of oil equivalent per day). Without the improvement, which was accomplished through increased efficiencies in automotive fuel economy, building heating and cooling, home appliances, and so forth, the economy would have required 25% more energy than was actually consumed.

Over the same period (1978–1986), annual U.S. coal production increased by 2.9 quads, and nuclear power output by 1.5 quads (3). The combined increase, 4.3 quads (after rounding), is less than one-fourth the 18.8-quad contribution from improved energy efficiency. (All other supply sources declined by 2.9 quads from 1978 to 1986, offsetting the increase in coal.)

The overshadowing of supply increases by efficiency gains was slightly more pronounced in 1985–1986 alone than for the entire period from 1978 to 1986. Efficiency gains in those 2 years totaled 5.1 quads, versus 0.7 quads added by nuclear and coal combined—a 7-to-1 ratio in favor of efficiency. Similarly, 27% of the efficiency gain over the 8-year period from 1978 to 1986 occurred in the most recent 2-year period (1985–1986).

Two years ago I wrote that "Efforts to exploit our Saudi-size reserves of inefficient energy use will provide the greatest payoff among our energy options, as they have since the 1970's" (4). The above data confirm this for the mid-1980's.

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REFERENCES AND NOTES

1. U.S. Energy Information Administration, *Mon. Energy Rev.* (August 1987), table 1.7, p. 12.
2. *Ibid.*, table 1.4, p. 7.
3. *Ibid.*, table 1.3, p. 5. Coal production data for 1978 are taken as the average of 1977 and 1979 to avoid overstating growth from artificially low 1978 output due to a coal strike.
4. C. Komanoff, *Science* **229**, 1038 (1985).

Personality Measures

I wish to thank *Science* for a most stimulating Research News article on "The genetics of personality" (7 Aug., p. 598). Its challenging contents, notably the important case study of the identical twins Oskar Stöhr and Jack Yufe, reconfirmed my old conviction that the important personality measure "mustache" should get more attention. Thus I have set upon myself to locate and sequence the MG (Mustache Gene), as well as the ESG (the Elevator Sneezing Gene), hoping by that to do my share in rendering more methodological the personality selection in my society.

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Erratum: In the report "Similarity of synthetic peptide from human tumor to parathyroid hormone in vivo and in vitro," by N. Horiuchi *et al.* (11 Dec., p. 1566), the caption for figure 1 was inadvertently omitted. The figure is reprinted below with the caption.

Fig. 1. Amino acid sequence of bovine and human PTH-(1–34) and hHCF-(1–34)NH₂. Identical amino acids are enclosed in the boxed area.

	1	5	10	15	20	25	30	34																										
bPTH	A	V	S	E	I	Q	F	M	H	N	L	G	K	H	L	S	S	M	E	R	V	E	L	R	K	K	L	Q	B	V	H	N	Y	
hPTH	S	V	S	E	I	Q	L	M	H	N	L	G	K	H	L	N	S	M	E	R	V	E	L	R	K	K	L	Q	D	V	H	N	Y	
hHCF	A	V	S	E	H	Q	L	L	H	D	K	G	K	S	I	Q	D	L	R	R	R	F	F	L	H	H	L	I	A	E	I	H	T	A