Thus those countermeasures may come too late to avoid unacceptable pollution damage. We have cited the storage of radioactive wastes as a classic example of this problem.

Edsall points to the unrealistic assumption of social stability underlying a nuclear waste storage program. If Weinberg accepts our results, it is interesting that he does not consider the potential impact of a conceivable rapid decline in population on the stability of the social institutions that must be maintained for the protection of radioactive materials. Unsupported promises of "essentially inexhaustible energy" serve only to forestall the social and economic changes which will inevitably be required to bring demographic and material growth into balance with the finite global environment. Our research addressed issues quite removed from this country's energy policy. However, to the extent that our study provides any basis for a choice among alternative energy strategies, we would agree most emphatically with John Edsall and with Hannes Alfvén, "Fission energy does not represent an acceptable solution to the energy problem. It would place an unendurable burden on the safety and health of future generations" (*2*).

DENNIS L. MEADOWS
Thayer School of Engineering,
Dartmouth College,
Hanover, New Hampshire 03755

References

1. D. H. Meadows, D. L. Meadows, J. Randers, W. W Behrens III, *The Limits to Growth* (Potomac Associates–Universe Books, New York, 1972).
2. H. Alfvén, *Bull. At. Sci.* **28** (No. 5), 5 (1972).

I was careful in my letter to point out that an inexhaustible energy source is a necessary—not a sufficient—condition for mankind's ultimate survival. Obviously many other things, including technologies for dealing with pollution and a degree of social stability, will also be required.

Meadows overestimates the difficulty of radioactive waste disposal in bedded salt. Radioactive wastes are now being sequestered in salt in Germany. To those of us who have been working on the matter, every problem that we have been able to think of—including such long-range questions as ultimate glaciations—seems resolvable. This includes the plugging of man-made holes (through which water might seep), although additional work is needed here.

Meadows characterizes my claim that the nuclear breeder provides an essentially inexhaustible energy source as an "unsupported promise." To the extent that any claim for the far future cannot be proved until that future has arrived, Meadows has a point. On the other hand, we do know that the amount of uranium in the granitic rocks is enormous, and that breeder technology, which is fairly well advanced, makes this all but inexhaustible resource available. I would turn Meadows' argument around and ask him, since he does not consider fission an acceptable solution to the energy problem, to propose some other solution that provides inexhaustible energy and is both technologically and economically more than an "unsupported promise."

ALVIN M. WEINBERG
Oak Ridge National Laboratory,
Oak Ridge, Tennessee 37830

Multidimensioned Matrix

On reading "Switchboard versus statistical theories of learning and memory" by E. R. John (8 Sept. 1972, p. 850), I was reminded of a poem I wrote in 1967.

Old Math

I am a multidimensioned matrix
of unrepeated primes
so
my every intersection is
unique and unequatable
what I want for lunch or
whom I want for president
is indistinguishable from
reaching for a cup of tea
or (should be) touching you
any product of unduplicated primes
can be factored in only one way
no indeterminism
no subjectivity
no ambivalence
no evaluation
no opinion
however
intersections containing composites
could be factored ambiguously as
the structure of the number permits
so
sometimes spaces show
between the primes and
(touching you)
products containing composites
from time to time
get hung up and
in consequence
so do I

MEL RECHTMAN
1642 Johnson Road, NE,
Atlanta, Georgia 30306