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gold ring, while the other is a metal–oxide–semiconductor strip. While the Aharanov–Bohm effect manifests itself as a shift in an interference pattern, the Hall effect displays a quantized conductivity. Obviously these experiments describe two different effects. The question uppermost in my mind is, are these two effects the result of the same fundamental law of nature, *the physical existence of the magnetic vector potential*? From this point of view it appears reasonable that the same effect is found in two totally dissimilar objects. A universal law should be independent of material or configuration.

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Physicists' terminology

The terminological error Veit Elser attributes to physicists (PHYSICS TODAY, May, page 120) is shared by lexicographers. *Webster's Unabridged Dictionary* (the revered 2nd edition) defines "finite" to mean "neither infinite nor infinitesimal." So does the *Oxford English Dictionary*.

This raises the interesting question of why, in spite of being "universally surprised," we "universally acknowledge the incorrectness of this choice of words" when Elser challenges us.

My guess is that we are seduced into acquiescence by a taste for simple logical paradoxes, a reluctance to consult authorities when we can figure something out for ourselves and an unwillingness to acknowledge that language (and life) are governed by laws somewhat murkier than nature's. Or is it just another tribute to Elser's charm and powers of persuasion?

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Polarized scattering

In your August 1985 Search and Discovery story on polarized scattering (page 17), Stanley Brodsky is quoted as saying, "We have absolutely no explanation for the Krisch data." While it is true that quantum chromodynamics offers no explanation, there are other theories that offer some explanation. In 1964, François Lurcat wrote[1] an article entitled "Quantum field theory and the dynamical role of spin." I quote from his abstract:

> The point of view currently taken in elementary particle physics, that the spin plays no dynamical role, is criticized here. This assumption has no experimental ground; it is merely a consequence of the wave equation used, especially in field theory.

The Krisch data show that Lurcat was correct to question the assumption. The wave equation used depends on the group assumed to underlie the physics. The group used in QCD, namely SU(3), is far too small to give a wave equation with dynamical spin. The group Lurcat uses is too small to give the strong interactions. The first theoretical question to answer, then, is "What is the correct group?"[2]

Many very interesting theoretical papers have been written since 1964 on the subject, and the interested reader should refer to the *Science Citation Index*.

References

1. F. Lurcat, Physics (NY) **1**, 95 (1964).
2. T. R. Love, Int. J. Theor. Phys. **23**, 801 (1984).

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Capping research overhead

I was gratified to read, in a recent issue of *The New York Times*, that the Federal government is planning to put a cap on university overhead rates on research grants and contracts. I have advocated such a course of action for the last ten years. To reimburse universities for all overhead costs incurred merely penalizes efficient university administrations that have kept overhead costs down while rewarding the most inefficient universities and encouraging them to incur still more costs. If this step had been taken voluntarily by the research community, the savings might have been made available for the direct costs of research. Now they will merely go toward reducing the Federal deficit. More cost cutting will still be needed. Now that the bureaucratic budget-cutters in Washington have noticed "overhead," it is only a matter of time before they discover "summer salaries."

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Physics classroom revisited

I wish to compliment George Pallrand and Peter Lindenfeld on their article

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