them precludes any knowledge of the other, in the sense that all possible outcomes occur with equal probability.

The irreducible (nonfactorable) degrees of freedom are labeled by the prime integer $\nu = 2,3,5, \ldots$, which is the multiplicity of the spectrum. Thus, $\nu = 2$ could be spin 1/2, or the basis of Fermi-Dirac statistics. The smoothed limit that produces the continuum, $\nu \to \infty$, could be the basis of the Heisenberg uncertainty principle, or of Bose-Einstein statistics.

With precise measurements of one variable, at the expense of the other, built into the system (assumed to be Heisenbergian in form), there are no grounds for handing out gold stars to celebrate "ingenuity" in the use of "loopholes." But the classical concept of conjugate variables is not the same as the quantum concept of complementary variables. In the relevant example of intensity and phase, the spectra are *not* the same. The Heisenberg uncertainty principle does *not* apply. I leave it to others to find out what does apply.

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References

1. J. Schwinger, *Proc. Natl. Acad. Sci. U.S.A.* **40**, 570 (1960); reprinted in *Quantum Kinematics and Dynamics* (Addison-Wesley, New York, 1970, 1991), pp. 63–72; *Hermann Weyl and Quantum Kinematics* (Verlag Peter Lang, New York, 1988), pp. 107–129.

History Lesson

While the Random Samples item about the death of Meriwether Lewis (6 May, p. 771) was fascinating, I think Canadians in general and historians in particular will be astounded to read that Lewis and Clark "led the first expedition across North America to the Pacific Ocean" in 1805–1806. On his first try at reaching the "Western Ocean" in 1789, Alexander Mackenzie descended the (now) Mackenzie River from Lake Athabasca to the Arctic Ocean. His second, successful expedition ascended the Peace River in 1792 to its source, crossed the Rocky Mountains, descended part of the Fraser River, and then went across country to the Pacific. According to his rock inscription, he arrived on 22 July 1793.

If we include Mexico in North America, the first white men to cross the continent on foot were Álvar Núñez Cabeza de Vaca and three other survivors of the Narváez expedition. In the years 1528–1536, they went from Tampa Bay to Apalachee Bay (Florida), built small boats and "coasted" until shipwrecked on Galveston Island (Texas), then went overland through what is now Texas, Chihuahua, and Sonora to the Pacific.

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Corrections and Clarifications

The News & Comment article "Animal tests take back seat to clinical data" by Lisa Seachrist (10 June, p. 1525) misidentified the author of a study that found specific mutations in the tumor-suppressor gene p53 in 50% of liver tumors from rats fed tamoxifen. The work was done by Gary Williams and his colleagues at the American Health Foundation in Valhalla, New York, not by David Kupfer of the Worcester Foundation for Experimental Biology, as the article reported. Kupfer found that tamoxifen is converted to reactive metabolites in the rat liver that become covalently bound to liver proteins; however, it is not known if this is detrimental to the animal.

Table 2 (p. 1127) of the report "Rules for α-helix termination by glycine" by R. Aurora *et al.* (20 May, p. 1126) was incorrectly printed. The corrected table appears below. In the same report, the second sentence of reference 36 should not have appeared.

Residue						Structural motif
C3>C4>C2	C1	Ccap	C′	C″	C‴	
Apolar Lys or Arg	Polar or Ala		Gly	Apolar Lys or Arg	Not "bulky"†	Schellman
Polar* not Lys not Arg	Apolar* not Ala		Gly	Apolar Lys or Arg		Helix continuation
Apolar Lys or Arg preferred			Gly only	Polar not Lys not Arg		α_L

*The helix continues if C1 is apolar or if C3, C4, and C2 are all polar and interaction with C″ is not possible. †In our polyalanine model, Trp was strongly disfavored for steric reasons, although smaller aromatic residues were allowed. More realistic sequences may impose further steric constraints.