

## Assertive sentence titles

SIR—If it is such a bad thing for molecular biologists to use declarative sentences in journal titles as Rosner asserts<sup>1</sup>, why have they made so much progress, at a time (1982–89) when this deplorable process so increased in popularity that only *Nature* seems to have escaped from the floodtide of assertive sentence titles (ASTs)?

Is it the result of a rise in confidence in a process which is so successful that buyouts and allegations of insider dealings in biotech companies are as much news in *Nature* as scientific budgets<sup>2</sup>?

Or has success so emboldened biologists to test their work by the methodology of proof by falsification that they have confidence to use declarative English? And are not declarative sentences much easier to prove erroneous than open-ended questions, which really are akin to playing tennis with the net down — no rules need apply? An example will suffice.

Rosner erroneously asserts that ASTs are often patently unprovable, for example declarations which cite that a process requires a certain component; Rosner claims that only when all possible conditions are tried can they be substantiated. But in fact, only the negation of the condition need be demonstrated. Declarations that a process requires or does not require a certain component are substantiated through the conspicuous use of control experiments.

The withdrawal by Fleischmann and Pons of their cold fusion paper submitted to *Nature*<sup>3</sup> had less to do with the absence of title citations in this journal's references, as one could infer from Rosner's hypothesis, than the referees' criticism of the need to control for possible neutron contamination from other sources, such as cosmic rays<sup>4</sup>. The cold fusion account from the Brigham Young group was published<sup>5</sup> after it corrected for possible background contamination in the results.

ASTs make for progress only when the underlying papers survive the same process of scrutiny used to test scientific hypotheses in other disciplines. It is the open-ended nature of the falsifiability criterion and not grammatical constructs that make for the tentativeness of scientific assertion and keep the scientific endeavour a process and not a product.

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1. Rosner, J.L. *Nature* **345**, 108 (1990).
2. Gershon, D., *Nature* **345**, 102 (1990).
3. *Nature* **338**, 691 (1989).
4. Carpenter, J.M. *Nature* **338**, 711 (1989).
5. Jones, S.E. et al. *Nature* **338**, 737–740 (1989).

## Relativity values

SIR—Stefan Marinov's apparatus designed to test relativity (*Nature* **346**, 103; 1990) is clearly similar in principle to the electromagnetic flow-meter, which works by measuring the voltage induced by fluid moving in a magnetic field.

Assuming that such an instrument is set up to give zero output for zero flow, a reversal of flow direction reverses the polarity of the output. I would therefore say that "the polarity of the slider depends on the direction of the current in the concentric circuit, and also on whether the slider moves clockwise or anti-clockwise".

We use electromagnetic flow-meters both as current-meters, in which case the instrument is fixed and the water moves, and as ships' logs, where the water may be stationary and the instrument moves. However, I have not yet managed to get an output from such an instrument by putting it in a bucket of water and marching across the laboratory with it.

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## Metric false trail

SIR—The influence of the metric system both in science and in everyday life has also been responsible for a fatal flaw in conventional computation. This is that the binary code of digital computers is exponentiated in radix ten numbers, instead of base two numbers. The result is that every switching operation carried out at the system clock frequency of a computer is essentially "bringing down the exponent" in order to carry out conversions between the respective number bases. All information is expressible in bits (binary digits) and there is therefore no reason why computation cannot be carried out directly in the binary system. The ineluctable advance of the metric system supposed by your correspondent C. H. Evans (*Nature* **345**, 658; 1990) will come to a permanent halt as soon as it is realized that the Emperor at the head of the procession has no clothes.

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## Never again

SIR—I should like to comment on the review by Robert N. Proctor (*Nature* **344**, 502; 1990) of Paul Weindling's book *Race and German Politics between National Unification and Nazism 1870–1945*.

J. F. Lehmanns Medizinische Buch-

handlung GmbH was founded in 1981 as an independent company; in the same year, the five Rothacker bookshops were bought by the Deutsche Arzte Verlag. The name J. F. Lehmanns was chosen for these bookshops without anyone being aware of the infamous past of this name.

For many years after the Second World War, high-level and specialist medical books with a high reputation in scientific circles were published under the imprint J. F. Lehmanns. This publisher has since been amalgamated into the well-known company Springer Verlag.

It was certainly a mistake not to research the background of this name. The past nine years have, however, proved that our company and its employees cannot be associated with any thought of nazism, however expressed. As far as it is in our power to determine, fascism and other extreme ideologies will never again stand a chance with us.

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## BSE gene-linked?

SIR—Managed cattle breeding, progeny testing and sire selection are commonplaces of British livestock husbandry. As a result, many of our herds have considerable common ancestry; and with widespread and cheap artificial insemination, it is not impossible for one bull to impregnate tens of thousands of cows, many of them in successive generations.

Bovine spongiform encephalopathy (BSE) is a peculiar disorder. It appeared abruptly, nationally and with no obvious geographical foci. If it is caused by an infectious agent, then this is both difficult to detect and difficult reliably to transmit. Indeed, those animals to which it is irregularly transmissible appear to come from the epidemiologically 'at risk' group. We see it as a transmissible disease primarily by analogy with scrapie and other neuropathologies; and we have sought an explanation for the rapid onset of diagnosis in the use of offal in stock feeds. One could, however, also see BSE as a genetic disorder brought to prominence by the extensive inbreeding and commonality of germ lines.

In view of this, it would be interesting if a researcher with access to the appropriate databases were to run a check on the ancestry of those cows diagnosed as having BSE. If BSE were to be shown to be the outcome of inbreeding rather than the transmission of an infectious agent, the economic implications — and the policy measures that should be followed — would have implications on a national scale.

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