

Significance of birth-dates

SIR — Various correspondents have commented on the birth-date effect in sport¹, university recruitment^{2,3} and scientific innovation⁴. That particular birth months confer advantage has long been recognized^{5,6}. Recent research has identified their effect as late as the age of 16 (ref. 7) in public examinations in English schools, and it can be seen in the form of selection effects in post-compulsory education at age 18 (data available from the authors) and at degree level⁸. The oldest children in each cohort perform best. Thus Dudink's argument¹ about younger children being disadvantaged is supported by extensive data from large-scale educational assessments.

Maturity apart, various causes of the birth-date effect have been put forward: the effect of climate during pregnancy, the length of schooling effect⁷ arising from varying date of entry into first schools, and each individual's age-position within the year group. The climatic explanation is disproved because international comparisons reveal that birth months conferring advantage vary to follow academic years in countries with differing school/college start dates.

The patterns reported in medical school entry in Italy and Portugal buck the general trend but have to be compared with contrary evidence from large surveys involving thousands of individuals (in some cases entire cohorts). How much weight should be attributed to the evidence of two small sets of data based on nonrandom samples and subject to uncontrolled selection biases?

Age-position effects could explain the pattern in the birthdays of scientific revolutionaries. Could being the eldest and most dominant in their cohort have given some scientists the confidence to challenge established paradigms?

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Universal spelling

SIR — Searching the bibliographic database, rather than manually inspecting tables of contents, is becoming common, and the use of both US and British spelling for the same technical term can cause confusion.

I recently submitted a paper about disulfide bonds to a journal published by a British publisher. The technical editor corrected 'disulfide' to 'disulphide' throughout my manuscript. This did not bother me, as scientists recognize the equivalence of these terms. But I soon realized that this causes a problem in database searches.

My searches (24 July 1996) into the Medline Subset in Molecular Genetics via the Internet yielded the following results. Searching for 'disulfide' against the title field and '1996' against the publication year yielded 19 articles, whereas 'disulphide' yielded 4 articles. When the abstract field was selected, these numbers were 117 for disulfide and 18 for disulphide. Most importantly, the papers retrieved by 'disulfide' and 'disulphide' were completely non-overlapping. Unless one repeats searches using both US and British spelling, it is easy to overlook important references. In a field such as biology, insisting on a spelling tradition does not make sense.

My simple-minded proposal for a solution would be to stop using the British spellings (or the other way around, but the figures suggest that this is less feasible) in scientific publications. This may be difficult for British publishers to accept, but they should remember that the rest of the world is forced to use English regardless of our mother tongues.

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Optical patterning

SIR — The technique of optical patterning will be an important step forward in the manufacture of liquid crystal displays (LCDs); but I believe that Schadt, Seiberle and Schuster (*Nature* **381**, 212–215; 1996) overemphasize its importance in improving the viewing characteristics of LCDs.

There are at least three factors that together make a displayed image viewable: brightness, image contrast and, in some cases, colour fidelity. Current LCD technology has problems with all three of these factors at wide viewing-angles. Although the multidomain technique discussed by Schadt *et al.* does improve the brightness distribution by averaging out the light output, it also reduces the head-on contrast. It averages out the relatively high head-on

contrast of LCDs with the poorer contrast at wide viewing-angles.

A comprehensive paper by H. Hatoh (*Proceedings of Semicon/Korea 96*, Flat Panel Display Seminar, pp 35–46, 24 January 1996) evaluated a dozen distinct techniques and their variants for improving the wide viewing-angle performance of twisted nematic LCDs. This evaluation included the multidomain technique discussed by Schadt *et al.* The discussion in Hatoh's paper cites the drawbacks to the multidomain technique, including optical artefacts (disinclination lines) and degrading of contrast ratio. Other techniques discussed by Hatoh gave much better optical performance, including 'in plane switching' and 'diffusing screen system' using a collimated light source. The latter he described as having a "perfectly [sic] wide viewing-angle".

Although all techniques have some drawback in practical application, the validity of a technology cannot be measured by one narrow aspect. Brightness distribution is important for displays; but so is contrast and colour fidelity.

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Faith, hope and taxation

SIR — George Marsden's review of *The University in Ruins* by Bill Readings (*Nature* **382**, 219; 1996) draws attention to an Oxford college that includes in all its job advertisements a statement of its dedication to excellence. He goes on to point out the emptiness of such statements.

Readers of the Classified pages will have noticed over recent years the growth in such statements in advertisements for British academic posts. In the same issue, one could read of universities "promoting excellence in teaching, learning and research" (three different universities), "at the leading edge of research, innovation and learning", "engaged in teaching and research of international distinction", "dedicated to excellence in teaching and research" and "promoting educational opportunity and the application of knowledge".

The mundane explanation for these ringing affirmations is that universities have discovered that, by some quirk of VAT (value-added tax) legislation, if a charitable (not-for-profit) body includes a brief statement of its aims in advertisements, it need not pay VAT on the advertising bill. Maybe the university's aims should include "excellence at avoiding VAT".

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