**Bye Bye Blackboard**

Blackboards were wiped out as use; they were meant for immediate communication, not for record. Even as they were being used, their messages were continuously revised, erased and renewed. But when Einstein came to Oxford in 1931, he was already, an international celebrity. After one of his lectures a blackboard was preserved and has become a kind of relic. It is the most famous object in the Museum of the History of Science.

To mark the centenary of the Special Theory of Relativity, the Museum invited a number of well-known people in Britain to chalk on blackboards the same size as Einstein’s. All these guest blackboards were prepared in the early months of 2005. This was an exhibition about science, art, celebrity and nostalgia. The blackboard is fast disappearing from meetings, classes and lectures: ‘bye-bye blackboard’.

**Jon Snow**

‘One is tempted in 2005 to consider Africa as our first responsibility – certainly it is my first love – but then if our global environment fails, what of Africa, what of us?’

**Brian Eno**

‘This is the depiction of a theory that Arabic singing bounced around the world in several directions, creating what we call popular music, and how the British blues were central to this.

**Alain de Botton**

‘I used my blackboard at a lecture in Borders Oxford Bookshop on 9th February 2005 to help to explain the structure of my latest book, entitled The Architecture of Happiness.’

**Richard Harris**

‘That the privilege of sharing the House of Lords Select Committee on Stem Cell Research. Most of us were non-scientists, but with the aid of a very good scientific adviser we did I think grasp some of the fundamental principles involved. Cloning was given us this right. Obviously I’d like all women to vote Labour, but even more importantly, whenever you select, vote, vote, vote.’

**Michael Heath**

‘This blackboard illustrates the “polymeal” recipes created as a response to the announcement from medical science that a “polypill” could significantly reduce the risk of cardiovascular disease, as a response to the announcement from medical science that a “polymeal” recipes were created as a response to the announcement from medical science that a “polypill” could significantly reduce the risk of cardiovascular disease.’

**Sir Nicholas Grimshaw**

‘I know there are those who are critical of the way in which I have chosen to work but whatever you select, vote, vote, vote.’

**Glenda Jackson MP**

‘For me one of the most heartbreaking issues we had to discuss and both then and subsequently I have found these little drawings helpful both for myself and others to whom I am talking.’

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**BROAD SHEET**

**BROAD SHEET** communicates the work of the Museum of the History of Science, Oxford.

It is posted on the Museum’s website, sold in the shop, and distributed to members of the mailing list. See www.mhs.ox.ac.uk

Broad Sheet is produced by the Museum of the History of Science, Oxford Broad Street, Oxford OX1 3AZ.
Tel +44(0)1865 277280 Fax +44(0)1865 277288.
Web: www.mhs.ox.ac.uk
Email: museum@mhs.ox.ac.uk

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**The Right Reverend Richard Harris**

Bishop of Oxford

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**Sir Nicholas Grimshaw**

President of the Royal Academy

‘There one of the most heart-breaking issues I get campaigning is when a woman will say, “Oh, I can’t vote.” Women died to give us this right. Usually it’s like all women to vote (Labour), but even more importantly, whenever you select, vote, vote, vote.’

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This is a reconstruction, to the best of my memory, of notes and a question (Q) that I put on the blackboard – of almost exactly this size – in the corridor outside my office in the Theoretical Physics Department at

Syrup University in 1972. Affiliated by problems in ecology, I had been studying some first-order difference equations that entomologists and fisheries people had suggested as rough surrogates of the dynamics of certain populations. Earlier work had focused on identifying constant, equilibrium solutions (‘nature’s balance’) and left this to me. I calculated the ‘location of period doubling’ and drew this line as the ‘borders and limit’ of the small world difference equation became more pronounced with increasing population growth rate, A, or A increasing, the equilibrium solutions for A change from constant to period-n cycles with successive periods 2, 4, 8, 16 … But I could make no sense of what happened next, beyond the ‘point of acceleration’ of these cycles at A = 14.7. Later, in collaboration with Jim Yorke (Maryland), George Oster (Berkeley) and others, I came to understand that beyond the 1-dimensional ‘chaos’, this was one of the two staircases that brought chaos centre stage in the mid-1970s, the other being Lorenz’s work on 3-dimensional systems of differential equations, where what is going on is inherently harder to understand. Incidentally, 10 Australian dollars in 1972 is more like £50 or more today, although still grossly inadequate for the (unclaimed) reward.

Tony Benn

Manager

I used my blackboard to list a few key questions we should all ask.

Richard Wentworth

Artist

translator/artist (As above, so below! 2005)

I like word of mouth. The invitation to try out Einstein’s ideas came to me as personal call to my mobile. The efficiency of the blackboards of my childhood were to mind immediately – their sense of landscape, as if text were cosmos, their sound, their beautiful receptive surfaces, and their fog of paipines – enjoyed putting a page in pieces of letter.

The alpha of ‘As above, so below!’ has been in use for nearly thirty years. My decision to use it in two languages, has perhaps with the way that Einstein shrouded in a nonalphanumeric Rosetta moment –

The alchemical alphabet ‘As above, so below!’ derives from the text known as the ‘Emerald Tablet’ attributed to Hermes Trismegistus, and known in the West from about the 15th century. It encapsulated the fundamental alchemical correspondence between the heavens and the earth.

Lord Martin Rees

Astronomer Royal

‘Some of us suspect that there is more in physical reality than what we’ve traditionally called our universe – the aftermath of our big bang’. Moreover, other big bangs could give rise to universes that behave very differently – with more structure or less, with universes that we are bigger, smaller, or nonexistent. These diagrams consider what the aftermath of the big bang could have been like. If too particular parameters were different from the values we currently observe the quantity D that measures how smooth the universe is and Einstein’s cosmological constant Lambda, the shading delineates regions where galaxies could form.

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