scientific appointments but their cybernetics work was secondary and was published in popular books rather than in academic journals.

By contrast, the US work was conducted at major universities, heavily funded by the US defence department. Some cyberneticians at MIT, such as Warren McCullough, had a background in neural modelling, but the mainstream research carried out under Wiener arose from his work on the automatic aiming and firing of anti-aircraft guns. David Mindell's book *Between Human and Machine* (Johns Hopkins University Press, 2002) provides a US counterpoint to Pickering's account.

With neither institutional nor government masters to answer to, the British cyberneticians were free to concentrate on what interested them. In 1949, in an attempt to develop a broader intellectual base, many of them formed an informal dining society called the Ratio Club. Pickering documents that the money spent on alcohol at the first meeting dwarfed that spent on food by nearly six to one — another indication of the cultural differences between the UK and US cyberneticians.

"British cybernetics lives on and dominates robotics by sheer numbers if not by recognized intelligence."

The work of the British pioneers was forgotten until the late 1980s when it was rediscovered by a new generation of researchers. They too were inspired by biological processes to propose computational models that differed from those of the mainstream. A vibrant community has since developed the old ideas and added new ones from evolutionary theory.

A company that I co-founded has now sold more than five million domestic floor-cleaning robots, whose workings were inspired by Walter's tortoises. In those homes at least, British cybernetics lives on and dominates robotics by sheer numbers if not by recognized intelligence. It is a good example of how unsupported research, carried out by unconventional characters in spite of their institutions, can have a huge impact. ■

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Lessons from Climategate

The Climate Files: The Battle for the Truth About Global Warming
by Fred Pearce
Guardian Books/Random House: 2010.
288 pp. £11.99/$19.95

After three inquiries, thousands of column inches and several death threats, the 'Climategate' affair is now subsiding into the long grass of conspiracy blogs. The rigour and honesty of the scientists involved in the furore sparked last November by the leaking of private e-mails from the Climatic Research Unit at the University of East Anglia in Norwich, UK, have been upheld. But the episode offers wider lessons on the politicization and communication of research.

After the illegally obtained e-mails were posted on the Internet, newspapers and blogs used snippets of them to spin tales of complicity and nest-feathering in climate science, of academics adept at using 'spin' and 'tricks' to keep the world from discovering the grant-sapping truth. The most active mud-slingers were the usual suspects, but phrases in the leaked messages such as "hide the decline" invited misinterpretation. *The Climate Files* by journalist Fred Pearce is a must for anyone who wishes to look further than the headlines to form a view on how much mud should stick, and to whom.

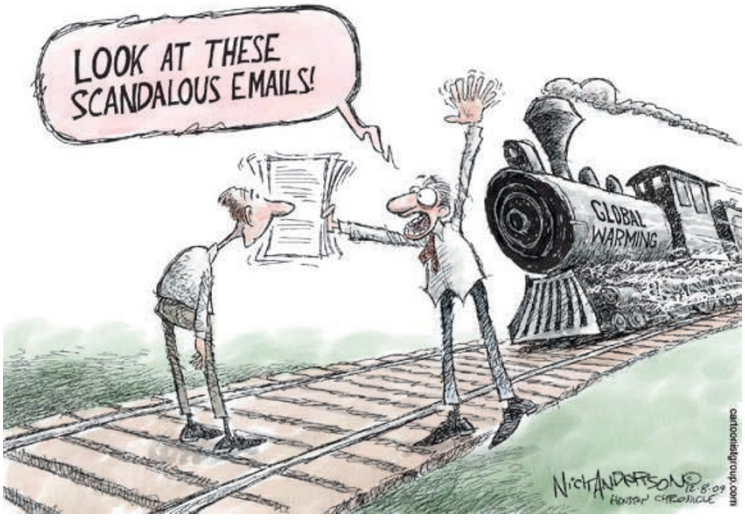
Pearce has long covered the work of the scientists involved and has a good knowledge of the key scientific debates, personalities and uncertainties. Much of the book is drawn from his columns in the UK newspaper *The Guardian*, with the narrative following the decade-long spats that dominate the correspondences. He gives lucid explanations of points of contention, such as the urban heat-island effect, interpretation of tree-ring data and the 'hockey stick' diagram of rising temperature over time.

The human side of the academics caught in the eye of the Climategate storm is handled well. Their frustration with the continual questioning of their methods and requests for raw data prompted many of the most petulant e-mail exchanges. Some scientists are fiery in their dismissal of what they perceive as politically motivated time-wasters; others recognize the need for greater transparency. Their interrogators comprise a similarly disparate group.

Pearce puts the contents of the leaked e-mails into their proper context. It transpires, for instance, that the oft-quoted "trick" to "hide the decline" refers to a graphical technique used to correct for the post-1960s breakdown in the correlation between temperature and tree-ring thickness. No smoking gun there.

For researchers, Pearce's book offers insight into how their work can become politicized and the shortcomings of the peer-review process. The Climategate affair has already changed how science is conducted and communicated. All scientists should welcome the push for improved data archiving and greater transparency. There are also lessons aplenty on how and how not to handle the media.

The abuse endured by the climate scientists at the centre of this storm is inexcusable, but ultimately their experiences may help every scientist. If our future work can deliver greater public trust after we've learned from Climategate, then something good will have come of it. *The Climate Files* holds those lessons. ■



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