

professors took in us children. Reisman's richly illustrated book recalls this aspect of family life in the community.

Looking back, some seventy years later, how should we judge the impact of the European academics? The draconian measure of closing the darülfünun to create Istanbul University left deep wounds. The 2006 Nobel laureate in literature, Orhan Pamuk, remarks in his book *Istanbul* (Alfred A. Knopf, 2005) on the unjust dismissal of traditional Ottoman scholars. His concern is the loss of the nation's identity in the

Atatürk reforms. Although distancing Turkey from its Ottoman past, the modernization has not yet led to Turkey's full acceptance as a Western nation.

Nevertheless, as Reisman notes, Istanbul University became established almost overnight and the foreign professors continued to educate Turkish students from 1933 until about 1948. By then a strong academic community had been built with talented young Turks. Dozens of new universities began springing up across the country, and the assistance of

the foreign professors, many of whom went on to productive careers elsewhere, was no longer needed.

Today, Turkish names appear on articles in leading international journals, showing how the vision of one man and the organizational acumen of another laid a foundation on which Turkey has continued to build. ■

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Gene expression

Sarah Jacobs mutates genetic information into art.

Martin Kemp

How can artists possibly confront the excruciating complexity of the human genome — or any genome for that matter? There are just too many of the letters C, G, A and T. It is possible, however, to make some general artistic statements about the human genome project and its implications, and about genetic engineering as a whole. But it is all too easy to sink to the level of the 'Frankenstein food' headline that appeared in the British newspaper the *Daily Mail* on 13 February 1999.

Sarah Jacobs shows that the complexity can be tackled head on. She has a record of working with the blank poetics of modern scientific discourse, with its studied eschewing of personal expression. Her 92-page e-book *Deciphering Human Chromosome 16: We Report Here* is studded throughout with phrases from the original article, 'The sequence and analysis of duplication-rich human chromosome 16' (*Nature* **432**, 988-994; 2004). "We report here" is one of these, together with "We observed" (of course), "Here we describe", "We constructed", "We adopted a strategy", "We then eliminated", "Finally we identified", and so on. Isolated, phrases that are so much part of scientific normality assume the quality of an incantation.

After the *Nature* article was published, Jacobs googled such terms as "human chromosome 16", "chromosome 16 book" and "chromosome 16 expression". She even searched for odd combinations, such as "chromosome 16" + "Saddam Hussein".

She sifted out around 250 website links on the basis of what appeared intellectually or intuitively interesting and "looked good". The e-book proceeds through simple pages of the incantatory phrases interspersed with coloured lower-case overprinting of the website links with fragments of their text and numbers from the original article in large capitals (see the page shown below).

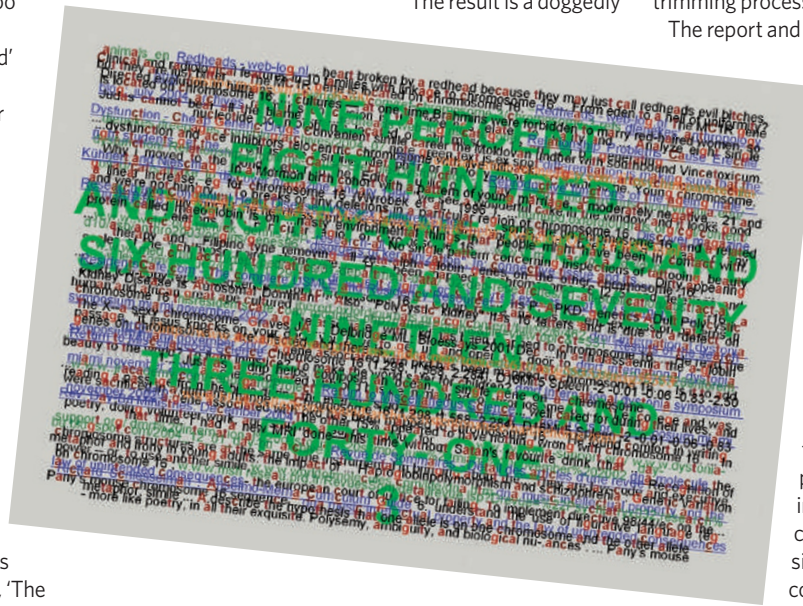
The result is a doggedly

perplexing, suggestive and strangely beautiful — and awesome

in their numerical persistence. Jacobs has created something drawn directly from the science and its diffusion, using the tools of a bibliographer. Yet the result subverts the science in the direction of chaos and cacophony. The effect is analogous to the way that the particularity of each individual person seems to confound the overwhelming similarity of our genetic constitutions.

At least, this is one possible interpretation. There are others. Jacobs is, I suspect, resisting any closed or dominant reading. And therein lies the difference between the original *Nature* article and Jacobs' visual play. The scientific exposition provides as little latitude for alternative readings as possible, whereas Jacobs provides a field for interpretative flexibility that triggers thoughts and insights of an unexpected nature — unexpected, perhaps, even to the author herself.

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SCIENCE IN CULTURE

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