A reminder of the joy and sorrow of reminiscence.

**Why Life Speeds Up As You Get Older: How Memory Shapes Our Past**
by Douwe Draaisma
(translated by Arnold & Erica Pomerans)

Yadin Dudai

The science of memory has so far been particularly successful when it has neglected actual memories. The reasons for this have changed over time, yet the paradox remains. Hermann Ebbinghaus, the influential founding father of systematic research into human memory, selected nonsense syllables as study material. This is partly because he wanted to use quantifiable, reproducible stimuli, but also because he was keen to get rid of semantics and to eliminate confounds of associativity in encoding and reconstruction in recall. But real-life memories are all about content — take it away and you are left with mental oblivion.

Animal research didn’t fare much better, although it had a more excusable reason: it is inherently more difficult to know what it is like to recollect like a bat than to identify with a recollecting human. The development of simple conditioning paradigms provided an effective way to study performance without having to rely on what the behavioural act means to the brain that commands it. Not surprisingly, it took generations, and thousands of publications, before mainstream animal learning research agreed to consider conditioned animals as knowledge systems, rather than as contentless automatons.

On top of all this came the remarkable success of molecular and cellular neuroscience, which often confused plasticity with memory. Memory is specific information about past events, whereas plasticity is believed to be the neuronal property that allows information to be retained over time. It is refreshing, then, to encounter Douwe Draaisma’s book, which reminds us that an interest in memory is primarily synonymous with a wish to understand the joy and sorrow of personal memory. By this we mostly mean memory of personal episodes, which cohere with a wish to understand the computational goal of the memory system and the algorithms used to achieve it.

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Would research into the temporal tagging? If so, how is it done
books and arts

and are there pathologies that scramble it?

But you don’t have to contemplate enigmatic research questions to enjoy this book. Some essays are touching indeed. In ‘Why life speeds up as you get older’ (which gives the book its title), Draaisma cites a letter from a patient suffering from Alzheimer’s disease who no longer remembers that her husband died eight years ago, and keeps writing him heartbreaking letters. Reading this left me not only with a semantic trace, but also with an episodic one. I suspect it will do the same to other readers as well.

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Down to business

University, Inc: The Corporate Corruption of Higher Education

by Jennifer Washburn


Graham Richards

Money corrupts. It was ever thus, but the thesis of this important book is that the universities’ current dependency on industrial links has reached a moral crisis point. Academic freedom, the book contends, has been severely compromised, with damage being done to the public and to the values of higher-education institutions. Here I must declare a conflict of interest, as I have been closely involved in creating spin-off companies and in a multimillion-pound deal to finance a state-of-the-art laboratory. Despite my possible bias in favour of technology transfer, University Inc. shakes one’s confidence and provokes the realization that some things may have to change.

It is a scholarly book, with almost 700 references and footnotes. However, the author, journalist Jennifer Washburn, cannot resist irritating portraits of many of the major players, for example describing Clark Kerr as “a balding man with bushy white eyebrows and alert blue eyes”. It is written exclusively from the United States point of view, where for a long time there has been tension between a utilitarian view of universities, as expressed by Thomas Jefferson, who no longer remembers that her husband died eight years ago, and keeps writing him heartbreaking letters. Reading this left me not only with a semantic trace, but also with an episodic one. I suspect it will do the same to other readers as well.

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Exhibition

Passing thoughts

Naglaa Walker, herself a trained physicist, explores the exact world of science from an inexact, intuitive perspective. This photograph captures the image of a passing thought chalked on a blackboard, which is as temporary as the writer wants it to be. It is one of a series in her exhibition On Physics, which runs until 7 May at the Hug Gallery for International Photography in Amsterdam.

The rise of the market-model university dates from the discovery of recombinant DNA technology by Stanley Cohen and Herbert Boyer in 1973 and its subsequent patenting. Washburn provides detailed scrutiny of what she considers the villain of the piece, the Bayh–Dole Act, signed into law by President Carter in December 1980. The bill seems to have been crafted originally to grant automatic patent rights to just universities and small businesses. It contained safeguards, such as a ‘march-in’ provision to enable the federal government to terminate licences, and time limits on exclusivity, but few of these survived to the final legislation. Major corporations did not lobby to oppose the act, which the Reagan administration soon extended to include them.

Since the 1980s, the desire to maximize entrepreneurial gains has grown, and they have become significant sources of university funds. DuPont gave $6 million to Harvard, and the German chemical company Hoechst provided $50 million for Massachusetts General Hospital — this was targeted money with expected tangible returns in terms of exclusive rights.

The most worrying questions, though, relate to clinical trials. Washburn recounts in detail the problems faced by James Kahn of the University of California, San Francisco, with a trial of the AIDS drug Remune, which was funded by the Immune Response Corporation, and the genetic-engineering trial at the University of Pennsylvania that resulted in the death of Jesse Gelsinger. No one can read these and other case histories in the book without considerable disquiet.

But what is to be done? Pandora’s box is already open. We cannot turn back the clock and return to a community of lone scholars, each seeking truth. Modern research in most areas needs massive funding — more than even the richest governments can afford. It is totally unrealistic to place walls between academic institutions and private industry. Universities can, and must, contribute to scientific and technological innovation for wealth creation without compromising their core scholarly principles, academic freedom or essential autonomy. In my opinion, this is becoming even more important as industrial innovations are increasingly the product of small companies, often spun out from universities, while larger corporations concentrate on marketing and selling.

Washburn suggests four fundamental changes. First, she calls for the creation of an independent, third-party licensing body that would assume control over technology-transfer activities in the United States, perhaps allowing some of the more successful campuses to opt out. Second, she has the Bayh–Dole Act firmly in her sights, and would have Congress revisit and revise it. In particular, she would change the language so exclusive licensing was the exception and not the norm. Furthermore, she wants the federal government to be able to intercede more easily to provide access to all taxpayer-funded research. The third reform, which would certainly be welcomed in most academic departments, would be to introduce strict conflict-of-interest laws, although the problems in laboratories at the US National Institutes of Health shows how even this might