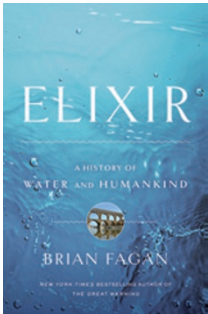


Defying gravity



Elixir: A History of Water and Humankind

by Brian Fagan

BLOOMSBURY: 2011. 416 PP. £20 / \$28

Engineers have been shoring up the banks of the Mississippi River for decades with ever-more-elaborate devices, such as levees, spillways and defences. But this spring, record-breaking floods, possibly made worse by climate change, tempted the river to permanently jump its banks and seek a new route to the ocean. Meanwhile, in China, the government made a rare acknowledgement of problems with the Three Gorges Dam. Although it is the world's biggest, the dam hasn't done much to control severe floods, its reservoir is plagued by islands of floating trash, and the tremendous weight of the water may be triggering earthquakes nearby.

These are just a couple of recent reminders that even with today's sophisticated technologies and with unprecedented energy consumption, we still have difficulty managing water. Yet most people take Herculean efforts to control water, such as those on the Mississippi, for granted, argues archaeologist Brian Fagan in his new book, *Elixir* — an attitude he says we need to change urgently.

Fagan has written several other popular books that focus on how people have dealt with shifts in the climate hundreds or thousands of years ago, namely *The Little Ice Age* and *The Great Warming*. His latest book takes a related but distinct approach, honing in on one essential resource — water — and its use throughout the history of civilization. Although modern-day water woes were a major motivation for Fagan in writing *Elixir*, the book's main focus is how people worked with water in the distant past, including their ingenious triumphs and epic failures.

Our ancestors had to use gravity creatively to bring water to their fields and cities, carving channels and tunnels into

hillsides, as well as using waterwheels to harness flows to power mills for grinding grain. If there's one thing that sets our present age apart from those that came before us, it's that we've figured out how to defy gravity, Fagan argues. We now use fossil-fuelled pumps to pull water up from deep underground and to push it over mountain ranges. With this power, however, "a sense of conquest, of supremacy, replaced respect for water," Fagan writes. As a result, he argues "an orgy of consumption ensued and continues to this day."

Many of our current ways of using water — such as mining fossil aquifers, for example — are clearly unsustainable. This may soon catch up with us anyhow, but climate change will also force our hand, Fagan argues. Informed by

scientific projections, he foresees an "era of prolonged global drought" for all those regions that are already struggling to get the water they want.

To see how we might do things differently, Fagan surveys 5,000 years of water management, looking both at the technologies people used and the social systems that went along with them. One of the simplest irrigation techniques — probably employed around the dawn of agriculture, and still in use today by some farmers in Kenya — is to dig furrows in the dirt to divert water as it flows downhill. In societies using these kinds of techniques, decision-making was probably by consensus, and the labour to build the furrows was largely voluntary and communal.

In each region, as societies grew larger, and as agriculture pushed into arid lands

ON OUR BOOKSHELF



Climate Change Denial: Heads in the Sand

by Haydn Washington and John Cook

EARTHSCAN: 2011. 224 PP. £14.99

Denial is part of the human condition. When people are afraid or confused, or when their self-image is challenged, they turn to denial. In this book ecologist Haydn Washington and founder of the Skeptical Science blog John Cook explain the social science behind denial and provide a detailed examination of common climate change-denial arguments, from attacks on scientific integrity to impossible expectations of proof. The authors show how we can overcome denial to make real progress in solving the climate problem.



Capturing Carbon: The New Weapon in the War Against Climate Change

by Robin M. Mills

COLUMBIA UNIV. PRESS: 2011. 288 PP. £15.99

The ability to capture carbon and store it underground has been heralded by some as the nearest thing to a 'silver bullet' solution to climate change. Though technologically feasible, how close are we to really embracing carbon capture and storage? In this book industry geologist and economist Robin Mills provides an accessible evaluation of the technology, weighs up the costs and benefits, and tackles the politics and policies needed to get carbon capture and storage off the ground. Mills also looks at the public's anticipated reaction to this technology and the opportunities for industry.