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Lift buttons, libraries and the Bible Belt

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Faster - The Clock of the Long Now

Time is money - and a lot else besides, as P. W. Anderson discovers.

"HURRY UP PLEASE ITS TIME"

T. S. Eliot

These are two books about time, a subject that seems to have become fashionable as we approach 2000. We are not talking here about the cosmic time that is the subject of physicists such as Julian Barbour, who wants to abolish it, but the ordinary fleeting time of human perception. Nonetheless there seems to be a lot to say about it.

Let us start with the more conventional of the two books, *Faster* by James Gleick, the author of *Chaos and Genius*, a biography of Richard Feynman. This is a discursive, anecdotal book, focusing on the many aspects in which modern humanity is concerned, or in many cases obsessed, with time. Gleick opens with a scene in the Directorate of Time, a branch of the US military concerned with the really accurate measurement of time using dozens of the latest caesium atomic clocks keeping tabs on each other. The spinning earth and its motion around the sun vary, in comparison, like outmoded wind-up clocks, and must be kept track of and corrected for. Time is indeed the physical quantity that can be measured with the highest accuracy (parts per trillion, the last time I looked). But as Gleick points out, this exactitude, and even any need for it, is a very recent phenomenon. The first accurate chronometers made 18th-century explorations possible by locating ships on the sea, but until recently landsmen kept only local time, synchronised with the sun, until against considerable resistance railways forced standardisation. But soon keeping time became so vital to us that an important use of the telephone entailed finding the time - and soon thereafter, of course, the telephone company began to charge for it.

One major theme of *Faster* is to show how our corporate and governmental masters save their time and squander ours, and manage, often, to charge us for it. As Gleick remarks, Benjamin Franklin said "time is money" and meant it seriously enough in his time; but he never had to wait ten minutes to get through a tollbooth line for the privilege of tossing a shilling into a bucket.

We are taken around a turn-of-the-century factory with Frederick W. Taylor, the first efficiency expert, his stopwatch concealed in a hollowed-out notebook marked out in hundredths of a minute, and then we fast-

forward to the scheduling control room of a major airline where planes, crews, gates and the weather are coordinated over the entire country, on a split-second basis with no spare capacity to allow for mechanical or other difficulties.

We go on to the Information Center of New York Telephone, where 21 seconds is allowed per caller, hour in, hour out. Make no mistake, when you and I have to wait for a delayed plane, or in a telephone queue (the worst in the US is for Martha's Vineyard ferry reservations), it is because the organisation in charge is saving time/money:

eliminating any excess capacity (in fact, operating at the lowest possible level) saves money at the user's expense in time. Incidentally, the worst offenders in this respect are monopolies - Microsoft is another such. (I was also struck by the truth of an insightful little paper I read about "designed criticality" by physicist Jean Carlson, which points out that when run near capacity, well-engineered systems tend to make glitches into catastrophes.)

There is no way that a reviewer can do justice to the density of anecdote and fact here. For instance, the brief chapter on "how to save time" books is a gem. Another is the chapter on elevator anxiety, which reveals that most "door close" buttons on lifts are connected to nothing, yet receive the most wear of all. Actually, at some point I was tempted to recall the emperor's admonition to Mozart: "too many notes, Herr Mozart!" But in the end Gleick gets serious and points out that "neither technology nor efficiency can acquire more time for you, because time is not a thing you have lost ... it is what you live in". All in all, *Faster* is a delightful read, but it does not carry the weight of either of the author's two previous blockbusters.

Stewart Brand's *The Clock of the Long Now* is a different ticker. Brand, too, is disturbed about the hectic pace and transient attention span of modern life, and quotes Moore's law about the exponential growth in the speed of modern computers as perhaps an underlying causal factor. (The law states that the speed of commercial computers grows exponentially, doubling inexorably every year and a half or so.) Brand's proposed solution is a drastic and somewhat quixotic one: to found an institution physically and intellectually focused upon the millennial time scale, the "long now".

Specifically, he wants physically to embody this institution by centring it upon a clock designed to keep running for 10,000 years, associated with a library preserving an appropriate selection of the world's information for the same lifetime in permanently accessible form. To this end he has formed the Long Now Foundation, a legally constituted non-profit organisation. The need for the library, as he points out in an all-too-brief chapter, is palpable. In the shorter term, it is evident that with the Moore's law growth in the theoretical capacity and speed of recording of information comes an equally rapid rate of change in the technology of doing so, which makes five-year-old information almost or truly inaccessible because of the rapid changes in computer protocols and means of presentation. For instance, as we burn the card catalogues of major libraries, replacing them with computer databases, we make access to the library dependent on a technology with no track record of permanence, vulnerable not just to fires but to computer viruses, power surges and outages, lost protocols and Lord knows what else.

In the longer term, the world has again and again seen wholesale destruction of cultural heritage, either physical, as in the burning of the library in Alexandria or in the Chinese cultural revolution, or intangible, as in the obliteration of native cultures in Asia by Islam, described in V. S. Naipaul's latest book, *Beyond Belief*.

The rationale for the "clock" is less evident. Brand feels that the ability to see the earth as a whole, as given us by the Apollo programme photographs, vitalised the environmental movement, and he wants to give a similar tangible form to the long view of time. His intent is to make it an aesthetically satisfying and physically impressive monument, a modern-day Stonehenge.

Stonehenge - this is where a twinge of scepticism begins to set in. Stonehenge already exists, and being in a geologically and politically stable place will do so for a while; and the greatest threat to it is from the "culties" who represent exactly the irrationality the Long Now is intended to combat, whom Stonehenge attracts like flies. Ditto - and actually *a fortiori*, if you will - the Pyramids. Scientific archaeology there is made almost impossible by the droves of the radically superstitious who cluster around them. Monuments derive their meaning as symbols from the institutions and cultures that build them, and they are no less and perhaps more vulnerable to being hijacked by quite different meanings because of being permanent and impressive.

Not that I begrudge the Long Now its clock, though I could give some advice: the American southwest, where the Long Now Foundation expects to build it, is geologically not very stable - underlain, often, with soft gypsum, for instance: great for scenery but not for stability. The biggest threat to the accompanying library lies in the growing anti-intellectual attitudes of the American polity, which are particularly intense in this Bible Belt region - and for how long, on the millennial time scale, can one guarantee that the US Congress stays permanently out of the hands of, for example, the Christian Right, to whom most of the library would be anathema? The Canadian Shield, Australia,

or the West Country of England (viz Stonehenge) all look geologically and politically safer to me. The great losses of libraries and cultural artefacts have been at the hands of monotheistic religions or monolithic ideologies, and this is the threat that makes the whole project seem a bit quixotic. Of course, the United States has no complete monopoly on superstition and fanaticism.

One last cavil. The group that constitutes the Long Now Foundation seems a little unlikely as custodians of ten millennia. Its first act was to set up a website - starting right out by sleeping with the enemy - and in fact those members who are not into pop culture are closely associated with the wired world: Esther Dyson, Danny Hillis, Kevin Kelly, Mitchell Kapor and others. I sense a lack of at least the appearance of intellectual seriousness: where are the archaeologists, historians, classical or other literary scholars, for example? One comes across statements like "the value of futuristic science fiction keeps growing with each decade", and indeed the sci-fi section of the foundation's library is to be emphasised.

I realise that I should not really be reviewing the idea, but the book. This, oddly enough, is rather a delight. I have it marked up with underlines and dog-ears, mostly approving, noting insights such as "eternity is the opposite of a long time". It is fun to watch Brand's quirky, encyclopedic mind in action. Of the two books, his is the one I more enjoyed reading - but should one take it seriously? I don't know.

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Faster

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The Clock of the Long Now

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