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The library

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What on earth would something aspiring to be a 10,000-year library be good for? One answer might be that it would provide, and even embody, the long view of things, where responsibility is said to reside. Another would be that it could conserve the information needed from time to time for the deep renewals of renaissance. The added element is that 10,000 years is an extremely long view, during which time there are likely to be profound cataclysms requiring many-levelled renewal. Building real value into a 10,000-year library could be an intellectual adventure as challenging as space travel.

What might be the best time-spanning, future-engaging categories to collect? History, obviously, and historiography: the history of the idea of history. Archaeology and paleontology, for the long human perspective. Environmental books, for their reach into the future. Science fiction, for the same reason, organised by date rather than by author, so the browser could scan the progress of the zeitgeist about the future. (The world's best in science fiction is the Eaton Collection at the University of California Riverside Library.) Likewise, nonfiction books about the future. Science and technology books, because their subject has become a major driver of history. Demographic and epidemiological texts, for trend analysis.

The scientist James Lovelock, best known for his Gaia theory of life-mediated regulation of the atmosphere, has proposed compiling a start-up manual for civilisation, beginning with how to make fire, moving on through all of science and technology, from subjects such as ancient genetic design (domesticating plants and animals by selective breeding) to current genetic design (cloning). "Who would guard such a book?" Lovelock asks. "A book of science written with authority and as splendid a read as Tyndale's Bible might need no guardians. It would earn the respect needed to ensure it a place in every home, school, library and place of worship. It would then be on hand whatever happened."

Lovelock worries about science skills being lost because they have become so widely scattered into countless narrow specialities. His civilisation primer would be the great cross-disciplinary reference work. Douglas Carlston lists other categories of endangered information: "information that was important to many but held by few, old information (Dead Sea Scrolls), restricted information (Stasi files), information of importance over long periods (structures, seismic records, weather, seeds), information held largely in highly degradable form (Technicolor movies)".

What do historians want preserved? I asked William McNeill, author of The Rise of the West and Plagues and Peoples, about the kinds of things his fellow historians wished had been saved from the past. Well, he said, there was the census of the entire Roman Empire, which the parents of Jesus were avoiding. Caesar delivered the document to the Roman senate, and that is all we know of its priceless contents. Then there are the delicate points in history, such as when Alexander the Great failed in India and headed back. Some historians think he was planning to conquer North Africa, which would have made the Mediterranean an Alexandrian lake and changed history. Some personal diaries of his generals would be helpful to have.

One of the great instruments of civilisation is the idea of the canon: the select set of items deemed to represent the best of a genre and the main line of progress and transmission from generation to generation in that genre. A primary function of universities is the care and feeding of various canons - mainly literature, the arts, science and the named academic disciplines. Other canons are strangely untended, such as technology, agriculture, and such nonacademic pursuits as gardening.

One canon I would like to see established is that of great textbooks. Just knowing the list - The Cell in Microbiology, The Art of Computer Programming, Colin Renfrew's (profile, Textbooks, page ii) Archaeology - would enable anyone to pursue top-level education on their own. All the best textbooks would nearly add up to Lovelock's primer of civilisation.

THE CLOCK

"Provide a description of what a visitor to the clock/library would see and experience." Alexander Rose groaned. How could he articulate to the US Internal Revenue Service a fantasy that was changing weekly? As executive director of The Long Now foundation, he had been getting from the IRS nothing but questions and delays in granting the foundation its crucial public education nonprofit status.

Rose reviewed his correspondence with the IRS, all his careful understated wording. Frustrated, he gave up and this time just gave them pure dream.

"You exit your vehicle at the base of a mountain in the high desert of the southwest United States. Looking up, you see a flight of shallow steps, each step carved from a layer of rock representing approximately 10,000 years of geologic time. After climbing 100 of these, or one million years into the future, you are awed and belittled by the greatness of geologic time.

"You arrive at a flat knoll where you see a cave ahead. Through the opening of the cave you see some large but slow movement. You proceed and gradually make out a giant pendulum swinging deep within. Once you reach the centre you realise you are within the clock mechanism and you are aware of the pendulum beating out its ten-second period.

"You proceed up a spiral staircase that will take you through the relatively low ceiling and up into the first layer of clock mechanics. On this layer you see the fastest of the mechanical calculation devices, which ticks once a day.

"As you go up flight after flight you see each progressive mechanism with its relatively slower tick, the last being the precession of the equinoxes, a 25,784-year cycle. The next few layers are the abstraction layers that adjust solar time to actual time and the delay for the pendulum-impulsing mechanism.

"When you reach the top of the stairs you are in a huge room several storeys tall. It is dimly lit from a slot cut through the living rock of the mountain on the southern face. You make out two giant helices, one descending either wall, each rotated by a falling weight that must weigh several tons.

"Then you are surprised by an immediate brightness in the room. It is coming from the sun that has just become directly in line with the slit on the wall. It is reflecting off a hemispherical mirror lighting up the whole room and heating up a sphere in the centre of a great dial. The heating of this sphere actuates a synchronisation mechanism that automatically adjusts the time of the clock to local noon. You can make out the dial around this sphere, now showing you the year in the cryptic method of keeping time when this clock was built. It reads: 11,567.

"At this point you wander through the rest of the facility to find a library and people accessing and preserving the data there. Akin to the truly ancient library of Alexandria, there is a constant forward migration of the data to better and denser methods of storage. In the main vault you find the original 1,000 books stored at the impossibly large scale of 100 nanometre pixels. These were the first 1,000 books stored in the clock/library chosen by its founders. Although not necessarily relevant to your time, what they began helped to teach people the value of knowledge over long periods of time. Without it humanity might have obsolesced itself out of existence without being able to look over the ancient records and find trends that are only apparent over centuries or millennia."

) Stewart Brand, 1999. The Clock of the Long Now, published by Weidenfeld and Nicolson, Pounds 12.99.