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FUTURE

Y2K

Will the new millennium begin with worldwide computer meltdown or an over-hyped, short-lived inconvenience

A computer "bug" is not the normal fare for Hinduism Today, but then again the "Y2K bug" is not your normal computer glitch. It's an error which at midnight of the next millennium could cause nuclear power plants to overheat, trains to stop running, ships to stall and go adrift--not to mention that your VCR might stop recording programs correctly. After January 1, 2000, bank vaults might refuse to open (or shut), as might the computer-controlled cell doors at New York's Rikers Island State Prison. Doomsdayers warn the cumulative impact could result in a global economic depression, or even the collapse of civilization as we know it. Others don't think the impact will be severe, but remain worried about a pre-New Year's panic causing a run on banks. The end of the last millennium--1000 ce--was also a stressful time for the West, with many believing the dreaded "end times" prophesied in the Christian Bible might commence. Now, fueled by the synergy between the Y2K bug, fears of "end times" and conspiracy theories, this little moment in history has generated real apprehension in some quarters. Search the Web for "Y2K" and you are likely to find insightful analysis next to outrageous speculation. Still, Y2K is a problem, a big problem. The United States Senate's "100 Day Report" issued September 22, 1999, 100 days before

the New Year, states: "Those who remain skeptical about the seriousness of the Y2K problem need only examine the amount of money being spent to address it: ^{US}\$1.6 trillion."

Just how much is \$1.6 trillion dollars? It's five times the gross national product of India, fifteen times the cost of the Marshall Plan, which completely rebuilt a devastated Europe after World War II, and nearly twice the assets of the 400 richest people in the US. General Motors alone is spending \$600 million on it; AT&T \$756 million and Merrill Lynch \$520 million. If the money were spent just on programming, at \$50/hour, it's enough to hire one programmer for sixteen million years. One Hindu leader pointed out the unusual karma of the people that developed the early computers, in that they are still around to witness the results of their two-digit date decision.

"Y2K" is computer shorthand for "Year 2000," the "k" standing for the Greek word kilo, meaning one-thousand. It names the expected malfunction caused by the convention of using just two digits for the year in computer dates. Instead of writing

"1960" back in 1960, the programmers wrote just "60" and gave little thought to what might happen in forty years as a result (no one guessed their calculators on steroids would soon run the world). Their reasons were economic: computer memory and storage were limited and expensive. The Y2K bug causes no problem at all as long as the computer's calculations remain in the 20th century and all dates begin with "19." The computer can compare just the 85 of 1985 and the 84 of 1984 and determine that 1985 is after 1984. Such calculations figure billions of times a day in the world's computers, determining everything from when you get your next light bill to when a hospital kidney dialysis machine must receive maintenance. But now comes the year 2000, and when the 00 of that year is compared with, say, 85, the computer logically but erroneously concludes that since 0 is less than 85, the year 2000 is earlier than the year 1985. Your credit card might expire in the year 2001, but a computer with the Y2K bug would tell you it already expired! The hospital machine, believing itself unserviced for a century, will shut down. In highly computerized societies, the list of potential problems goes on and on--through the electrical systems, water supply, air traffic control, banking

system, shipping and control of nuclear plants and missiles.

The problem has been known for decades, but only taken seriously in the last few years. In part, nontechies just couldn't understand how such a simple thing as a two-digit date could have so many dire consequences. Articles written for the popular press as late as 1998 denied there was a problem. Computer experts had to paint the bleakest possible outcomes just to get businesses to listen, much less part with a few hundred million dollars to fix the errant digits. The most responsive businesses got started in 1993 or 94, the laggards are just going to wait and see what happens. It is estimated that 200 billion lines of code have to be examined and updated. That's enough pages to wrap around the Earth 30 times.

It isn't fair to blame the computer scientists of the time, for their date shorthand may well have saved more than the cost of the fix. Consider that in 1970, Hinduism Today bought one "K" of memory on a foot-long board for \$2,000 to augment a typesetting machine with a total of

16K memory. That means the machine (state of the art for its time) could hold 16,000 characters in its memory, and the board added a much-needed 1,000. Today you can buy 16 MB of memory--that's 16,000K or 16 million characters--for \$25.49. At the 1970 prices and dollar value, those 16MB would cost \$128 million!

The US Senate report, available at <http://www.senate.gov/~y2k/documents/100dayrpt/>, is the most authoritative and current analysis available. It is relatively optimistic for the USA, citing the enormous amount of effort already expended to fix the bug. The report anticipates sporadic problems which "will cause more inconveniences than tragedies." It is less encouraging about other countries, especially Russia, China and Italy, and is unwilling to speculate of the possible fallout of economic chaos in unprepared countries. So concerned are the Americans about accidental missile launches that they've invited twenty Russian officers to the US Space Command Headquarters in Colorado ("The Mountain") for an edgy New Year's Eve party. Experts in both nations will monitor for erroneous missile launch data. There is a danger

in stimulating public panic prior to the New Year, resulting in more disruption than anticipated from the bug itself. A run on banks, stated computer executive Vivek Burhanpurkar of Canada, could cause a major world crisis in itself.

Given the uncertainty, governments are recommending preparations similar to those for any natural disaster, such as earthquakes and hurricanes. They include: 1) Collect printed records of your investments, insurance and bank accounts; 2) Have extra cash on hand; 3) Depending on where you live and how you feel about Y2K, keep a week's, month's or three-month's supply of food and water on hand; 4) Prepare for first aid, tools and clothing (especially in cold climates); 5) Review the State Department reports before travel.

Both the UK Foreign Office (www.fco.gov.uk/travel/) and the US State Department (http://travel.state.gov/travel_warnings.html) issued official advisories for most countries of the world. India is on the list as a country that has made more efforts at solving the Y2K problems of other nations than its own. We asked Rajeev Srinivasan of Bangalore, an employee of Sun Microsystems, what might happen if the power were to be interrupted in that city. His reply: "Lots of people have generators already." He added that "In 1977, in a fit of pique, the government of India ejected both IBM and Coca Cola and decided India would henceforth use Unix computers. Thus, there are few mainframes here. So little is computerized it won't make that much of a difference." The US State Department expressed concern about both India's power grid and shipping ports. But

Indians are well prepared just by virtue of their daily life habits to tolerate disrupted telephones, electricity and water.

A Hinduism Today survey of experts close to the Y2K problem revealed a surprising sense of optimism.

Manoharan Navaratnarajah, a New Jersey programmer who has worked on the Y2K bug for large financial institutions for years, said, "My opinion is there won't be much serious disruption in the US--though I am unsure about the federal agencies. Those that are least prepared are also less dependent on computer technology and therefore more able to survive any

breakdowns that may emerge." Easan Katir, a successful California-based financial and real-estate investor, responded, "In the financial world, all but five US securities companies have certified that they are Y2K-ready, and those five are being shut down if they do not comply by November 15. The Federal Reserve Bank is going to provide extra cash to banks, should there be a panic withdrawal. The biggest fear is that correspondent banks in Europe and Asia may not be ready. A few Wall Street prophets are predicting a stock market crash, but most are not. Real estate people feel there may be a few glitches, but nothing

unsolvable." Sadhunathan Nadesan, a Southern California programmer, offered this conclusion: "If a few things go wrong at the millennium, we technicians will find them and deal with it. It's not that much different than what we deal with every day. Why is everyone so worried?"

In May of 1999, the International Monetary Fund issued a report on Y2K stating, "The millennium bug may be compared to a natural disaster. Because it is global in scale, resources and expertise to repair problems could become severely constrained early in 2000.

The effects are potentially significant, but should not be exaggerated because experience suggests that economies can quickly recover from temporary shocks." Don't panic, but do make prudent preparations.

Is the End Coming?

The world's religions have different ideas about what will happen

Western civilization feared the last millennium much the same as it fears this one. Large portions of Europe's people believed the end of the world was at hand. They sold their possessions and stood on

hilltops that night for something that never came. In part, the fear is linked to the Christian doctrine called Millennialism, the belief based upon the Book of Revelations of the Bible that the Messiah will return to Earth and reign for a thousand years of peace. However, the Book of Revelations doesn't say anything about when the reign begins, nor connects it with any 1000-year date, only that once it does come it will last a thousand years. That detail, pointed out by Christian theologians, has not prevented multitudes of conservative Christians from believing that the return of the Messiah could begin in a matter of

days. In part, they base expectations on the belief that we are in the tumultuous "end times" --a not unreasonable judgment given the level of unrest in society today.

The idea something could happen with the year 2000 is Christian in origin--the year has no special significance in the Hindu calendar. Chakrapani Ullal, noted Indian astrologer, pooh-poohs the fears: "The new millennium has nothing to do with astrological configurations. The new millennium is a nonevent year like any other year with its ups and downs. It is nothing special.

The only time which may have some impact is during April/May of 2000 when five planets will come together in a particular constellation."

Every religion has an eschatology, the doctrine of last things or the end of the world. For Hindus, the end of time comes with Mahapralaya, the complete absorption of all existence and all souls back into God--an event still comfortably hundreds of millions of years in the future. There is, however, the transition from the present Kali Yuga of darkness to the impending Sat Yuga, an era of light.

According to traditional calendars, this lies thousands of years ahead. Still, some organizations of Hindu origin say we are now at the end of that dark time. The Brahma Kumaris predict massive destruction at the end of the millennium and that only 900,000 people from the present will survive into the Sat Yuga. Maharishi Mahesh Yogi of the Transcendental Meditation movement also holds that we are now in that transition.

An article in Delhi's Life Positive magazine by Anupama Bhattacharya summarized some end-game scenarios for planet

Earth. The 16th century French prophet, Nostradamus, made several predictions about the end of the millennium. One in particular, 10:72, states that a great ruler will return in "the year 1999" and bring a reign of peace. American prophet Edgar Cayce predicted that the Earth's poles would flip in 2001--the magnetic pole would suddenly be in Antarctica instead of Northern Canada. That is something which happens from time to time, every few hundred thousand years. The cause is unknown, but the effect would indeed be cataclysmic. There are asteroids, due every sixty or seventy million years, which would certainly do the job of recycling the

planet, but none are expected anytime soon. The Muslims have a belief in qayamat, in which Earth is destroyed and souls are called to account for their lives. But there has been no prediction as to when this might occur. The Hopi American Indian calendar predicts upheaval about now, and the Mayan calendar schedules it for 2012. The natives of the Andaman Islands await a great earthquake that will destroy Earth and bring all souls into a paradise.

Eschatologies divide between those that hold a linear view of history and those that are cyclical. Eastern

faiths look at time as circular, and any end as a new beginning. Western ones view time as linear and irreversible--the "end" occurs once and for all, followed by an eternal sacred world. However, no faith has predicted Earth's end to be from two missing digits of computer code.