

Device helps move paralysed wrists

■ **CHICAGO:** Monkeys regained the use of paralysed wrist muscles with a computer-aided device that uses brain signals to direct movement, US researchers said. The finding may lead to treatments for people paralysed with spinal cord or other injuries, they said.

Antarctica probe for sea rise clues



■ **OSLO:** Scientists will visit a vulnerable part of an Antarctic ice shelf this year to work out if it will crack off in coming decades and perhaps trigger a rise in sea levels, they said on Thursday. The scientists, including from the University of Edinburgh and working with the British Antarctic Survey, will drill into the ice and use radars on the Larsen C ice shelf on the Antarctic peninsula.

Grief chemical in brain found

■ **LONDON:** Scientists have pinpointed a key brain chemical involved in dealing with the sudden loss or long-term separation of a partner, they said. The finding in a type of rodent called a prairie vole could lead to potential treatments for people suffering severe depression-like symptoms after losing a partner, Oliver Bosch of the University of Regensburg in Germany and his colleagues said.

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CONTRASTING ALLIES

In the aftermath of the Cold War, following decades of estrangement, the world's two biggest democracies have come to increasingly regard each other as 'natural allies', as all democracies should. The recent Nuclear Deal is perhaps symptomatic of this emerging strategic alliance. Their long-term strategic interests are converging into the 'manifest destiny' of the 21st century. If International terror, energy security and the China factor are shared strategic concerns, there exists a synergistic global comparative advantage in the 'sunrise' information technology and knowledge sectors.

In several respects, however, the two countries are a curious study in contrast, constraining a deeper appreciation of each other's vision. Superficial differences are startling. The plug of your electrical gadget will not fit into the socket. Replacing plugs would be the least of your problems, however, because 220 volt stuff has to be jettisoned altogether. Welcome to 110 volt country. And yes, apart from your TV, VCR and DVD recorder don't bother to take your cassettes and DVDs either. The PAL operating system used in India is incompatible with the American NTSC system. Also, forget your old car and driving license as you will now be driving on the right hand side of the road. For good measure, reorient your metric math away from litres, kilometres and kilograms to gallons, miles and pounds.

But there are also differences so fundamental as to make the 'manifest destiny' a dialectical curiosity. India is one of the world's oldest civilisations. The United States is a relatively new immigrant society. Both countries have long coastlines on their eastern and western seaboard. But the American population is clustered along the seaboard, while the most thickly populated parts of India are in the Gangetic heartland. America is the wealthiest country in the world, home to the largest proportion of the world's rich. India has the single largest mass of the world's poor.

America is a highly urbanised society. Universal access to urban amenities has so vastly improved the quality of suburban life that people have been migrating out of congested and crime-prone urban centres. The majority of Indians still live in rural areas. Poor infrastructure and stagnant rural incomes are triggering rapid migration to urban centres fast collapsing under the strain. Differences in economic organisation are stark. Over 60% Indians are employed in agriculture, compared to 2-3% in America. India has a vast informal economy. The American economy is fully digitalised with few cash transactions. Differential factor endowments shift India's comparative advantage towards labour while America's comparative advantage lies in capital.

Both countries have a federal political

India and the US are a curious study in contrast. Apart from the similarities like both countries going to polls one after the other, superficial differences are startling. So are the fundamental ones



structure. However, except in matters relating to foreign policy and defence, the American States are all powerful, having successfully resisted attempts made by the Union to impose new laws and taxes, making it very difficult to amend the Constitution. The control of financial levers makes the Centre much more powerful in India. On average, the American constitution has been amended once every twenty years, compared to once a year in India. Curiously, coalition politics is strengthening the States at the expense of the Centre, whereas a diametrically opposite process is at work in America consequent on globalisation and the war on terror. There is a blurring between the legislature and the executive in India. With both the legislature and the executive independently elected directly there is a true separation of powers in America. Consequently, the American President is more powerful than the Indian prime minister, who can be unseated any time by a simple majority in parliament.

While both are open societies with a free press, independent judiciary and fundamental individual rights, the philosophical underpinnings of freedom are quite different. The American concept of liberty, derived from its 'frontier' origins, is negative, based on distrust of government

overreach. A distinctive feature of American democracy is how much individuals realise their responsibility, contributing generously to charity and the community. Robust local governance at the community level that runs libraries, schools, and etcetera, keeps the state out of people's hair while getting the job done. Unlike India, people don't throw garbage on to the street and expect government to clear it up. In America civil society comes first, individuals second, family third and the state last.

The Indian pecking order is reversed, except that family interests come first. People cheerfully break rules, trample on common rights and resort to nepotism and corruption to maximise familial welfare. The Indian concept of liberty, derived from its colonial experience, is positive, with a strong, paternalistic state seeking to 'protect' freedom and moral values, maximising public good and endeavouring to ensure equal outcomes. Indians turn to government, rather than to civil society, for resolving problems, making the system eminently corruptible at every level. Conversely, the state is blamed for all shortcomings in day to day life.

Both countries have resorted to affirmative action to address historic injustices. Their approach to equality, however, is as different as that to liberty. The American concept is based on the proposition that all people are created equal and have a right to spacious freedom that produces unequal outcomes. The Indian approach is based on the presumption that since people are created unequal freedoms have to be restricted to ensure equal outcomes. Restricting private enterprise, protecting jobs and reservations are logical corollaries.

Despite greater income inequalities America is a far more equitable society. Senior executives stand in line and await their turn to buy coffee. At home they fix broken latches themselves. It is amazing what Indians, particularly politicians, officials and heads of families, feel what they are entitled to. They expect 'menial' jobs to be done by underlings and hate to stand in queues. Both societies are based on the rule of law in whose eyes everybody is theoretically equal. But while it is well-nigh impossible to negotiate with the law for even minor offenses in America, India remains a 'casteist' hierarchical society with differential rules and entitlements. Those in positions of privilege and power can even 'negotiate' their way out of major crimes.

ALOK SHEEL

(The writer is a civil servant. Views are personal)

'Walking fish' gives evolutionary insights

Reuters
WASHINGTON

AN EXTRAORDINARY fish that existed 375 million years ago had unique features in its head that helped pave the way for vertebrate animals to live on land, scientists said.

Scientists for the first time described features in the underside of the skull of Tiktaalik roseae, the so-called 'walking fish' discovered in the Canadian Arctic in 2004. It

is considered an important transitional animal in the evolution of fish into amphibians, the first land-dwelling vertebrates.

The findings showed that the migration from water to land was more complicated than merely having a fish's fins transform into legs, the scientists wrote in *Nature*.

"It's not to say that Tiktaalik itself is a terrestrial animal. It spent most of its time in water, for sure. So what it's really demonstrating is that many of these changes that

are occurring and things that we once associated with terrestrial life are turning out, in fact, to be adaptations for life in shallow water settings that Tiktaalik might had found himself in," Jason Downs of the Academy of Natural Sciences in Philadelphia said.

"Fish in the water, insects on land—it could feed on all of those if you look at the skull," said Neil Shubin of the University of Chicago, another of the researchers.

HOW WILL THE US VOTE AFFECT OIL PRICES?

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OPEN SCIENCE CAN LIGHT A VILLAGE IN THE MIDDLE OF NOWHERE.

Open Science uses the power of collaboration to do extraordinary things. 44% of the Indian population is without electricity, but the promise of solar energy offers a solution. India receives the solar energy equivalent to 5,000 trillion kWh/year, far more than the country's current energy requirements. As part of its commitment to Open Science, DuPont is setting up a photovoltaic lab at the DuPont Knowledge Center at Hyderabad. This lab will work closely with India photovoltaic players to improve the lifetime and efficiency of photovoltaic cells, driving down the costs and helping to deliver clean, sustainable energy. We believe it's collaborations like this that can help solve the biggest challenges of our time. In other words, science that's open, opens up possibilities for people everywhere. Learn more at dupont.com/openscience



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