

Look back for lessons, not glories.

By Richard Lim.

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Dr Lam Lay Yong's discovery that the Chinese invented **mathematics** long before others is a grim reminder of the price China paid for closing its doors

TEN days ago, after China's loss to Turkey, which dashed its hope of entering Round 2 of the World Cup, a Straits Times report said: 'Chinese soccer fans mourning their country's dismal showing in the tournament may take comfort in the widely held belief that it invented football. After all, the earliest record of the sport can be found in China.'

It reminded me of what the Emperor Kangxi (1662-1722), who was one of China's most open-minded, said in response to the new scientific challenge posed by a fast-growing Europe:

'Even though some of the Western methods are different from our own, and may even be an improvement, there is little about them that is new. The principles of **mathematics** all derive from the Book of Changes, and the Western methods are Chinese in origin...'

To take comfort in past glories when one is beaten in a challenge by another, and to say that the winner has won only because he has learned from you, is the response of a stubborn loser, who fails to see that he has not kept up with changes, however great he might have been at one time.

Why do you think the Book of Changes was called that by the wise sages who devised it eons ago?

By the way, because it corresponds to the British parliamentary system, soccer is more likely a British invention than a Chinese one. Chinese children may have kicked a silk ball around many centuries ago, but that does not make them inventors of the game.

What the Chinese did invent though, way before others, is the universal numerical system, which was long believed to be a Hindu-Arab invention. This was discovered to be so after more than 30 years of research by **mathematics** professor Lam Lay Yong, who retired a few years ago from the **National University of Singapore**.

In a Page 1 report in The Straits Times two Thursdays ago, Dr Lam, 66, was quoted as saying that the Chinese were adding, subtracting, multiplying and dividing at least 1,000 years before anyone else, around 400 BC, with simple bamboo rods.

'The ancient Chinese invented a notation such that with the knowledge of only nine signs, any number could be expressed,' she said.

The numerical system is known as Hindu-Arabic only because the Chinese, although they had invented and developed it to a very sophisticated level by the 13th century, did not transfer it into a written system. It was the mediaeval Middle-Eastern scholars who did and added in Indian knowledge.

For her contributions to the history of **mathematics**, Dr Lam won the Kenneth O. May medal, the highest honour given by the International Commission on the History of **Mathematics** once every four years.

You can say it is the equivalent of the World Cup championship medal, and Dr Lam is the first Asian to win it. She will be receiving the award at the International Congress of Mathematicians in Beijing come August.

Her husband, Pin Foo, has promised me a fancy lunch and a good bottle of wine.

The publicity-shy Dr Lam did not disclose this to The Straits Times but she had gone up to Cambridge to do a higher degree in **mathematics** on a Queen's scholarship, and while there, was inspired by the work of sinologist Joseph Needham, who was studying and compiling the history of Chinese science.

This led her to make the history of **mathematics** her lifelong work, even as she taught at the NUS.

We should rightly celebrate the achievement of Dr Lam, but that the Chinese invented the numerical system is certainly no cause for celebration or something to take comfort in.

Because Singaporean culture is still so new and thin a layer, with not much of a heritage to speak of, many of us can feel insecure when it comes to self-definition.

So, for depth, some of us reach back to the high civilisation days of China or India or the Muslim Middle East to claim that particular heritage as ours.

The logic goes like this: The Chinese invented **mathematics**, besides paper, printing, gunpowder and the magnetic compass. So the Chinese were once great, if not the greatest.

I'm of Chinese descent, therefore I cannot be that badly off. My cultural, if not genetic, inheritance is illustrious.

Conveniently, I forget that my Chinese forefathers were really illiterate peasants from the south of the huge country, far from the centre of high learning in the north.

A Muslim can look back and claim, too, that the world of Islam was as glorious - culturally and technologically - as Ming China, at a time when the Europeans were just crawling out of their Dark Ages.

Historian Paul Kennedy points out: 'The Ottomans had established a unity of official faith, culture and language over an area greater than the Roman Empire, and over vast numbers of subject peoples.

'In **mathematics**, cartography, medicine, and many aspects of science and industry... the Muslims had enjoyed a lead (over the Europeans).'

While we should explore our ancient heritage, and better yet, explore it in the language of that heritage, the more pertinent question we should ask is: But what went wrong?

Why didn't China and the Islamic world launch the Scientific Revolution? Why did it turn out that it was their pupil - the Europeans - who did it, propelling themselves into modernity, and became their master and teacher?

THE answers to these questions offer instructive lessons for us, especially at this critical juncture when the world is morphing from modernity to postmodernity.

Many answers have been proposed by historians and scholars, such as David Landes (*The Wealth And Poverty Of Nations*, 1998), Bernard Lewis (*What Went Wrong?*, 2002) and Paul Kennedy (*The Rise And Fall Of Great Powers*, 1988), among others.

To be simplistic about it, stasis - resistance to change - and retreat into rigid dogma are two of the key reasons that China and the Muslim world began falling rapidly behind the West from the 16th century.

Young and small though we are as a nation, we ought to learn from the mistakes of these great, sprawling civilisations.

What the late Chinese leader Deng Xiaoping said in his address to the Chinese People's Congress in Beijing in 1984 bears repeating here: 'Nowadays, before any nation can become prosperous, a closed-door policy would no longer work. The Chinese people have paid the price for such a foolish policy, so did our ancestors in the distant past.

'The Ming dynasty, under Emperor Yongle, did wisely pursue an open-door policy resulting in Zheng He's famous maritime expeditions overseas.

'But following Yongle's death, China abandoned this policy, resulting in foreign intervention and China's ultimate humiliation during the 19th century. The open-door policy is therefore the way forward for China.'

Bi guan zi bao (close the door and protect oneself) - that led to the stasis of China.

So it was heartening to read in *The Straits Times*, on the same day that it carried the story on Dr Lam, about China's release of a 'taller blueprint', the 2002 - 05 National Talent Development Strategy Framework, which aims for a great leap in the number of skilled workers in science and technology.

New laws are also being drafted to lure foreign talents in the fields of biotechnology and science management to live and work in China.

ON THURSDAY, in Kuala Lumpur, at the Umno Annual General Assembly, Malaysian Prime Minister Mahathir Mohamad lamented the Muslim nations' rejection of knowledge and industrialisation.

Strip away the rhetoric against enemies both within and without, real and imagined, here was a country's leader for two decades, lamenting how he had failed in his principal task of making the Malay race successful.

Among others, he blamed those teachers of Malay children who, instead of providing them a good education, chose to teach them the politics of hate and did not sow the true values of Islam.

'These people are the betrayers of the religion and the Malays,' he said.

When I read the transcript of his address, I anguished again - as I did when I first read reports about the cases - for those few innocent children in Singapore whose fathers had yanked them out of primary schools, because they insisted that their kids be allowed to wear tudung to school, which contravenes the policy of the Education Ministry.

Why retreat into a literal, if not distorted, interpretation of a mediaeval faith? The children will end up losers, when they are not allowed to be trained to access the ways of the new world.

As Dr Mahathir, who asserted that Malaysia is not a moderate Muslim country but a fundamentalist one, said: 'But we know the teaching of Islam are not rigid and so tight that we must carry them out without taking into consideration the surroundings and the consequences.'

'We know under certain conditions we are allowed leeway, so that the religion will not be a burden and hurt us.'

Maritime South-east Asians should not forget that their history stretches back to the glory days of the Srivijaya kingdom in the seventh and eighth centuries and the Majapahit kingdom in the 13th to the 15th centuries.

Their history certainly did not begin with the imperialistic spread of Islam to the region later. Neither did it begin in the desert of the Middle East, where there is reason to cover oneself up against the sand blown up by the wind.

Historians believe that Srivijaya laid the foundation for the use of Malay as a lingua franca in the entire archipelago.

Indonesia's national motto, *Bhineka Tunggal Ika* (unity in diversity), comes from a Majapahit text.

To come back to soccer and the World Cup: Can title-holder France, which did not even make it past the first round of the current tournament, take some comfort in the fact that the Senegal team which beat it is made up of players who honed their skills on French

soil?

Richard Lim's website is at www.limrichard.com.

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