

CHAPTER 1

Waiting for a Thousand Years

When future generations of Indian school-children read history, they will be made to memorize two important dates from the 20th century — 1947 and 1991. The importance of the first is obvious. It was the year when India gained independence from Britain, a colonial power that had dominated the country since the 18th century.¹ Despite the bitterness of the sub-continent's partition into Muslim-majority Pakistan and Hindu-majority India, the year 1947 was undoubtedly an important turning point in the country's history.

What of 1991? It was the year that India decided to liberalize its economy, but can it be said to be a turning point comparable to 1947? For almost half a century, the country had been held down by self-imposed constraints that had hampered economic development and stunted its international stature. Liberalization has clearly unleashed the country's economic potential. However, the shift in 1991 was not just about changing economic policies but about gaining freedom from a cultural attitude embodied in the old inward-looking economic regime.

¹ The Portuguese held on to their enclaves in Goa, Daman and Diu till 1961, till they were forcibly evicted by Indian troops. They had been the first European colonial power in Asia and they were the last to leave. In 1999, they peacefully handed back Macau to China.

The regime is usually associated with Jawaharlal Nehru, India's first Prime Minister, and his advisor Mahalanobis. However, the "Nehruvian Vision" was only the latest manifestation of an inward-looking cultural attitude that had held down the Indian civilization for almost a millennium — far longer than foreign conquerors.

India has a long and proud history. However, during its "golden age" prior to the 11th century, it was a country that encouraged innovation and change. Indian society celebrated its risk-takers. It was open to foreign trade, ideas and immigrants. Foreign students flocked to its universities even as foreign merchants flocked to its ports. Yet a change in cultural attitudes by the 11th century created a fossilized society obsessed with regulating all aspects of life according to fixed rules. Not surprisingly, this discouraged the spirit of innovation and led to a long and painful decline. India fell behind not just as an economy but as a civilization.

The year 1991 marks the turning point when India was forced to open itself out to the world. The "opening" was not limited to the economy but to all aspects of life, and the process was sped up by the fact that it coincided with the communications revolution — cable television, mobile telephones, and the internet. This book will argue that the long-term impact of this on India will be similar to what was witnessed in Western Europe following the Renaissance.

Of course, the process of change did not begin suddenly in 1991. It has its roots in early 19th century Bengal. Thanks to Raja Ram Mohan Roy and his fellow reformers, the country witnessed important social reforms as well as the introduction of the English language. The process gradually spread through the country till the

middle of the 20th century. Independence from colonization should have accelerated the process but unfortunately it led to a reversion to isolationism. Instead of catching up with the world, the country fell even further behind.

It was only with the opening of India in the 1990s that it has seen a renaissance both as an economy and as a civilization. The efforts of the 19th century reformers had prepared India for the flood of ideas. Moreover, the country also now had a large and successful global Diaspora that provided the country with international linkages that it had not enjoyed since the days of the ancient spice trade.² Within a few years, there was a major shift in India's cultural attitude to change. In this sense, the year 1991 has the same importance in Indian history as the Meiji Restoration in Japanese history. This year witnessed that instead of whining about the rest of the world, Indians began to believe in themselves again.

This book is about how India has finally become free, and how it has the opportunity now of transforming itself and the world. There are many hurdles on the way — the poor state of the institutions of governance, the quality of tertiary education and so on. However, there are also strong forces that will support India's transformation.

² The Indian Diaspora first began to expand in the 19th century as groups of merchants and indentured labour began to settle in British colonies like Mauritius, South/East Africa, the Caribbean, Singapore and Fiji. By the sixties, significant numbers moved to Britain and Canada (including refugees from Idi Amin's Uganda). From the seventies, the focus shifted to the United States which attracted large numbers of the country's most talented students. However, significant numbers also emigrated to the Gulf States. The latest trend shows Indian professionals being attracted to rapidly growing cities like Dubai, Singapore and London.

Demographic change and a primary education revolution are unleashing the same dynamics that have already transformed the rest of Asia. A middle class is emerging that will soon demand major institutional and political change. India's rise is not predestined but, for the first time in a millennium, it looks like it has the courage to exploit the window of opportunity.

This book largely deals with India's economic resurgence. However, throughout the book, we will be mindful that economic resurgence is only part of a wider civilizational reawakening. An open cultural attitude is perhaps the single most important condition for an Indian renaissance — far more important and long lasting than demographic shifts and rising savings rates. Both the rise of Europe following the Renaissance and the revival of Japan after the Meiji Restoration predated their demographic shifts. Rising savings rates and literacy rates were important to the extent that they accelerated the pace at which new ideas and technologies were disseminated and absorbed. By themselves, labour and capital are not sufficient. The experience of the communist bloc during the course of the 20th century clearly shows the limitations of generating growth by deploying capital and labour without an open cultural system. In the end, these societies simply could not deal with change despite their ability to generate complex new technologies. It is the same reason why the Nehru–Mahalanobis attempt to modernize India through the public sector was doomed to failure even if it had survived to see the demographic and literacy shifts.

These days it is commonplace to hear people talk about how India is emerging as a great economic superpower and how, together with China, it is reshaping the world production system. The next two chapters look at the

sequence of events that brought India to this juncture. In subsequent chapters, we look at the emerging forces of demographic change, urbanization, growing middle class and rising literacy levels. We look too at the major hurdles that India needs to cross and the risks that it must face. Finally, we will speculate on how India will change in the 21st century.

Before we go on to discuss India's present and its future, it is important to briefly look back at its past. Most people would think that India's decline began with European colonization in the 18th century. However, the country's relative international position had been in almost continuous decline for over a thousand years, predating not just the European colonization but even Mahmud Ghazni's infamous raids in the 11th century. To understand the magnitude of the decline, we will look back at India's pre-eminent position in the world economy in ancient times. Only then can we fully appreciate the wider importance of the transformation India has experienced in the last decade and a half.

The "Golden" Past

India was home to one of the earliest human civilizations. The Indus Valley Civilization (also called the Harappan Civilization) flourished between 3300 and 2000 BC in what is now north-western India and Pakistan.³ It was a

³ Some scholars are of the opinion that the civilization was centered along the now dry Saraswati river rather than the Indus. However, I have persisted with the term "Indus Valley" as it is better known. In any case, the debate between the two rivers is not pertinent to this book.

contemporary of the ancient Chinese, Mesopotamian and Egyptian civilizations. Very little is known about the history of the civilization since few written records have been found and the script is yet to be deciphered. However, the ruins of its cities are extraordinary and suggest a very sophisticated economy that was able to support major urban centers.

Unlike its contemporary civilizations, Harappans did not build grand buildings to rival the Egyptian pyramids. Instead, the Harappan sites are more remarkable for their attention to urban planning. Their towns appear to be built around standardized plans that included plumbing, street-grids, granaries, public baths and other civic amenities. Most modern Indian towns would do well to emulate their example. It would not be unreasonable to say that the average Indian of that era would have enjoyed a standard of living that was far higher than that of his/her contemporaries in other parts of the world.

Most interestingly for our current purposes, there is strong evidence that the Indus Valley had active trade links with the outside world, particularly Mesopotamia. Archeologists have uncovered a sophisticated system of docks for sea-going vessels in the port city of Lothal in Gujarat. Some historians link it to a land the ancient Sumerians called “Meluhha”. It is unclear what these Bronze Age civilizations traded, but Mesopotamian sites have yielded many terracotta seals from the Indus Valley. These seals were likely used by merchants to mark individual shipments.

The Indus Valley Civilization eventually went into decline around 1800 BC. It is not known why it declined. The old “Aryan Invasion Theory” is now largely discredited and the currently fashionable view is that it had

something to do with desertification and other environmental changes. The archeological and cultural evidence shows that the focus now shifted further east to the Gangetic plains. It was here that in the fourth century BC that the Mauryan Empire rose. According to tradition, the Mauryan empire was built by Chanakya (also called Kautilya), a professor of Political Economy at Takshila University.⁴ Together with his pupil Chandragupta Maurya, he created the Mauryan Empire in order to check the advance of the Macedonian Greeks led by Alexander. The two built the largest political entity India has ever seen, covering virtually all of the Indian sub-continent and with its capital in Pataliputra (near modern Patna). In 305 BC, Chandragupta defeated the Macedonian general Seleucus Nikator, Alexander's successor in Asia, to secure Afghanistan and possibly parts of eastern Iran.

What we know about the Mauryan Empire suggests a very prosperous country with an efficiently run administration. Foreign trade flourished and was officially encouraged. We can deduce this from Kautilya's *Arthashastra*, a treatise on public administration and political economy, that was possibly meant as a manual for the running of the newly established empire. It clearly highlights the importance of foreign trade both by land and by sea. The *Arthashastra* calls for the appointment of senior officials to look after highways and ports as well as to encourage foreign trade. Kautilya specifically recommends that when it is inefficient to produce certain goods

⁴ Very little is known for sure about Chanakya but there are a number of strong legends and traditions related to him. His magnum opus, the *Arthashastra*, gives a good insight into the mind of this empire builder.

locally, officials should keep in mind the advantages of importing goods from another country.⁵ It is amazing that, 23 centuries ago, Kautilya was explicitly thinking about comparative advantage and the international division of labour!

In his book "*Indika*", Greek ambassador Megasthenes⁶ describes a country with a well-irrigated agricultural system and a sophisticated artisan manufacturing sector. It is clear that India's economy was considered very advanced at that time. This does not mean that Indians were too proud to absorb new ideas from the Greeks. In subsequent centuries, Greeks influence is clearly visible in areas ranging from sculpture to coinage. Even the Hindu temple may be of Greek origin. The ancient Vedic texts suggest that Hindus originally did not worship idols and build temples, and it is quite likely that both Hindus and Buddhists got the idea from the Greeks.

Many kingdoms rose and fell during the centuries that followed the decline of the Mauryan empire but India remained a major economic power. According to Angus Maddison's estimates, India accounted for 33% of the world economy in 1 AD.⁷ India's share was three times the share of Western Europe and was much larger than that of the Roman Empire as a whole (21.5%). China's share was 26% of world GDP and was significantly less than that of India. In other words, India was by far the world's economic superpower at that time.

⁵ Chapter on Trade and Transport Officials, "*Arthashastra*", by Kautilya.

⁶ No copy of the "*Indika*" itself has survived but we have extensive quotes in the works of other Greek writers.

⁷ "*The World Economy: Historical Statistics*", by Angus Maddison, OECD, 2003.

Over the centuries, economic activity in the coastal areas of the southern peninsula grew to rival that of the northern plains. This may be partly due to the disruptions caused in the North-West by periodic invasions by Central Asian tribes. However, the shift was encouraged by a boom in maritime trade. There is evidence that by first century BC India was at the center of a complex maritime trade network functioning in the Indian Ocean. This boom in maritime trade was made possible by the discovery of the regular directional shifts in the monsoon winds, a discovery that Greek sources credit to the navigator Hippalus. As a result, a number of major ports appeared on both the coasts such as Tamralipti (modern Tamluk in Bengal) and Muzaris (usually identified as Kodungallur in Kerala).

To the East, the Indian Ocean maritime network extended as far as the Hindu kingdom of Champa (in modern-day Vietnam) where Indian merchants must have exchanged goods with Chinese merchants. There are also numerous references in Indian sources to the islands of Yavadwipa and Suwarnadwipa, usually identified as Java and Sumatra, respectively. India exported textiles, metal-wares and pepper in exchange for spices and gold. Other than black pepper, most of the spices that Europeans then thought of as Indian spices actually came from Indonesian islands where they had been purchased by Indian merchants. The beautifully carved panels of Borobodur in Central Java show the goods-laden merchant ships that criss-crossed the Indian Ocean.

In the popular imagination, the Silk Route through Central Asia is usually regarded as the arterial highway of ancient East-West trade. The romantic image of the Silk Route owes much to the writings of Marco Polo.

However, it is more likely that the southern “Spice Route” was the more important trade route between the Mediterranean world and Asia. Even Marco Polo returned home to Italy by the southern sea route and has left interesting accounts of his journey through South East Asia and the southern Indian coast.

The cultural impact of this era on South East Asia remains clearly visible. It may be most obvious in the Hindu island of Bali, the ruins of Angkor and in Buddhist Thailand but, throughout the region, the influence of ancient India shows through in everyday life from personal names to the immense popularity of the epic Ramayana. The national language of both Malaysia and Indonesia is “Bahasa” which is full of words derived from Sanskrit. Indeed the name “Bahasa” itself is derived from the Sanskrit word “bhasha” meaning language. To this day, the coronation of the king of Thailand and other royal ceremonies are carried out by Hindu Brahmin priests.

In India too, cultural traditions continue to recall these ancient trade routes. For instance, in the state of Orissa, the festival of Kartik Purnima still celebrates the day on which the Sadhaba merchants set sail for far-off lands. A large fair called “Bali-yatra” is held in the town in Cuttack which scholars think marks the annual departure of merchant fleets for the island of Bali.⁸ The voyages to South East Asia were long and dangerous. These festivals echo a culture that celebrated its entrepreneurs and risk-takers.

⁸ “Maritime Heritage of Orissa”, by Prof. Atul Kr. Pradhan, Utkal University (paper taken from the Orissa government’s official website).

India's maritime links extended to the West as well where it traded with the Persian and Roman Empires. There were two main routes — one via the Red Sea and one through the Persian Gulf. From there, they made their way in caravans through the desert (and/or sailed up the Nile) to Mediterranean ports such as Alexandria. Indians sold textiles, spices (some that they had brought from South East Asia) and other luxuries. Black pepper from the Malabar was a particularly important export and it was sold in such large quantities that it was widely available even as far away as Roman controlled Britain.

Interestingly, the most important items that the Indians seem to have demanded in payment from the West were precious metals. Thus, the Indian trade surplus with the Roman Empire caused a constant one-way flow of gold coins. Roman writer Pliny (AD 23–79) wrote that “Not a year passed in which India did not take fifty million sesterces away from Rome.” The drainage of gold was so serious that Emperor Vespasian was forced to discourage the imports of Indian luxury goods and ban the export of gold to India in the first century AD.⁹ As a result of these centuries of trade surpluses, Indians accumulated a large store of gold. It is estimated that even today some 25–30% of all the gold ever mined is held by Indian households in the form of jewelry even though the country itself has very few gold mines of its own.

The growth in maritime trade does not mean that the land routes in the North were abandoned. Despite periodic disruptions, trade routes through Central Asia

⁹ This was not just a matter of trade protectionism. Gold was money, and the continuous outflow of gold was the ancient equivalent of severe monetary tightening.

(a branch of the Silk Route) continued to flourish through the first millennium. Note, however, that India's pre-eminent position was not limited to trade and economics alone. Indian mathematicians, astronomers, metallurgists and physicians were arguably among the best in the world and were held in high regard.

The treatise on surgery by Sushruta (circa fifth century BC) describes a hundred and twenty surgical instruments and 300 procedures. Plastic surgery was a routine procedure. Meanwhile, Indian mathematicians made extraordinary innovations, including the concept of zero, that is the basis of the numerical system that we use today. During the Gupta Empire (third to fifth centuries AD), the astronomer-mathematician Aryabhatta was able to work out that the earth is spherical and that it rotates on its axis. He argued that the phases of the moon were due to the movement of shadows and that the planets shone through reflected light. He even made remarkably accurate estimates of the circumference of the earth and of the ratio Pi. All these, a thousand years before Copernicus and Galileo.

Throughout these centuries India also produced remarkable works in art, literature and philosophy. Hindu-Buddhist kingdoms from South East Asia to Central Asia looked to India for intellectual and cultural leadership. Pilgrims and students came by both the land and sea routes to study in Indian universities like Taxila, Nalanda and Ujjaini and to visit the holy sites. Much of what we know about ancient India comes from the diaries of these foreign visitors. Just like the famous universities of today, the prestige of these ancient seats of learning attracted international endowments. An inscription dated to 860 AD tells us of how

the king of Suwarnadvipa (Sumatra) made an endowment to Nalanda. On the whole, India had an extraordinary economic, intellectual and cultural influence throughout the ancient world. Moreover, this was an influence that was almost entirely exercised through peaceful means. With the one notable exception of the Chola naval raid on the Srivijaya kingdom in Sumatra in 1025 AD, there are virtually no records of offensive Indian military intervention outside of the sub-continent.

In a way, India's place in the ancient world was similar to that which is occupied by the United States today. It was not only the dominant center of economic and cultural activity but also a magnet for various groups of people who came to seek either fortune or refuge from persecution. Not many people realize that India is host to one of the oldest Jewish communities in the world. It is believed that the earliest Jews came to trade at the time of King Solomon but, after the destruction of the Second Temple by the Romans in 70 AD, many refugees settled in Kerala. Some of their descendants still live in India. India is also host to the last remnants of the once powerful Zoroastrian tradition. They fled persecution in Iran in the eighth century and settled in Gujarat. Known as the Parsis, they are today a very successful business community. These are, but a few examples of the numerous immigrant groups that settled in India during its golden age.

The picture of ancient India is of a society that encouraged innovation and risk-taking. It was open to foreign trade, ideas, international students and political refugees. It is true that ancient texts sometimes refer to foreigners as "mlecchas" or barbarians but this does not

seem to have prevented the exchange of goods and ideas. If anything, this exchange was celebrated in festivals and folklore. Unfortunately, this open attitude did not last for ever.

The Decline

India appears to have maintained its position as a pre-eminent economic and cultural world power till around the 11th century. After this, its relative position steadily declined. It is striking that all of India's great contributions to the world were devised prior to this date — yoga, algebra, the concept of zero, chess, plastic surgery, metallurgy, Hinduism, Buddhism and so on. Even the last great flowering of ancient Hindu culture was not in India itself but in the far away empires of Angkor (Cambodia) and the Majapahit (Indonesia). In both these cases, the evidence clearly shows that cultural innovation was increasingly indigenously generated after the 11th century rather than inspired by contemporary India.

Between 1000 and 1820 AD, India's share of world GDP fell from 29% to 16%. In other words, India's position was long in decline well before the colonial period. The industrial revolution and colonial occupation only sped up the process. As the industrial revolution spread through Europe and North America, India fell ever further behind. When India gained independence in 1947, its share in world GDP was barely 4% and this fell to 3% by the time it liberalized its economy in 1991. Of course, India's economy did grow in absolute terms during this millennium but it fell far behind the rest of the world.

Contrast this with what happened in other parts of the world. China, and then Western Europe, bypassed

India as the economic engines of the world. In 1000 AD, China's economy was 23% of the world economy (a bit more than three-fourth the size of the Indian economy). However, by 1500 it was the same size as India's and thereafter has always remained significantly larger. Western Europe went through an even larger relative shift. During the first millennium of the Common Era, following the collapse of the Roman Empire, the European economy went into decline in both relative and absolute terms. However, this changed dramatically as the Renaissance gradually took hold. Between 1000 and 1500, Western Europe's economy grew fourfold and its share in world GDP doubled from 9% to 18%. Thereafter, its share rose at an accelerated pace. By 1820, as the industrial revolution was taking root, Western Europe accounted for almost a quarter of the world economy. Industrialization widened the gap further, especially if one includes the contributions of Western offshoots such as the United States. Together with the United States and other offshoots, the West accounted for almost 60% of the world's economic output by 1950.¹⁰

Of course sheer size is not the only indicator of relative economic progress but the trends in per capita income also tell a very similar story. According to Angus Maddison's estimates, India, China and Western Europe had roughly the same per capita income in 0 AD.¹¹ Standards of living declined in Europe after the collapse of the Roman Empire and by 1000 AD we find that both China and India had average per capita incomes that were 113% of Western European standards. However, the

¹⁰ This definition of the West does not include Eastern Europe and the USSR.

¹¹ "*The World Economy: Historical Statistics*", by Angus Maddison, OECD, 2003.

situation reverses as Europe goes through the Renaissance and by 1500 AD, India's per capita income is only 71% of Western Europe while China's is at 78%.

From here European powers begin to dominate the world. By 1820, just as the Industrial Revolution was gathering pace, the average Indian earned just 43% of the average European and the average Chinese managed 49%. Indian per capita incomes declined, not just in relative terms but even in absolute terms, during the 18th century due to the turmoil that accompanied the dissolution of the Mughal Empire. The Industrial Revolution caused the gap to widen at an accelerated pace. By 1950, India had a per capita income that was just 14% of Western European levels. Devastated by war, the average for China was even lower at 10%. Again, the data are consistent with a view that India began to fall behind from the 11th century and that colonization and the Industrial Revolution merely sped up the process.

Over the last millennium, India went from being an economic and cultural superpower to becoming virtually irrelevant. This is why 1991 is potentially such an important turning point — it could mark the reversal of a trend that has lasted a thousand years.

Why Did the Indian Civilization Go Into Decline?

India had maintained its position as a cradle of civilization and a lynchpin in the global trading system for a remarkably long time. Indeed, it did this for longer than any country before and since. Why then did it go into such a sharp decline after the 11th century? It is tempting to simply blame it on repeated foreign invasion — by Turks, Mongols and Afghans from Central Asia and later

by European colonial powers. Between 1000 and 1025 AD, Mahmud of Ghazni made 17 raids into northern India. Then, following Muhammad Ghorī's victory in the Second Battle of Tarain 1192, waves of invaders from Central Asia subjugated the sub-continent. The Muslim conquest of India was undoubtedly a very bloody affair — temples, universities and cities were laid waste and hundreds of thousands, perhaps millions, of people were massacred (anyone who doubts this should read the *Tarikh-i-Farishtah*¹²). The impact on India's social fabric was harsh and it led Nobel Laureate VS Naipaul to call India a "wounded civilization".

However, this alone does not quite explain the secular decline of India as a civilization and a leading world power. India was no stranger to foreign invasion. Over the centuries, Huns, Bactrians, Indo-Greeks, Sakas and others had invaded India. Their invasions must have caused disruptions but did not cause a long-term decline in the country's fortunes. The Indians had put up a spirited resistance to these incursions — the Gupta and Mauryan Empires had both risen up in response to external threats. Even when the invaders had penetrated deep into the country, India had simply absorbed and assimilated these groups into its larger fabric. Indian civilization had lived on. In the case of the post-11th century invasions too, India successfully absorbed many elements of Islamic culture. However, the country's relative position went into secular decline. What had changed?

In popular perception, the Muslim conquest of India was the result of a young and vigorous religion defeating

¹² The English translation by John Briggs is available as the "*History of Mahomedan Power in India*" (re-printed by Sang-e-Meel Publications, New Delhi, 1981).

an old pacifist civilization. This is why it is seen as having been especially disruptive. However, this is hardly borne out by the sequence of events. Hindu India was quite able to fend off Muslim incursions for hundreds of years. During the period of the great Arab expansions of the seventh and eighth centuries, the Muslims conquered an empire that ran from the Iberian peninsula to the borders of India. They defeated with ease many of the great powers of the time including the Sassanians of Persia and the Byzantines. Yet, despite repeated attempts, they were unable to expand into India beyond a tiny toehold established in Sind in the early eighth century. It would be another four centuries before Muslims would be able to hold territory in the Indian heartland. Meanwhile, several Hindu warrior kings like Bappa Rawal led successful military raids against the Muslims during this period and the Hindu Shahi kings continued to rule over most of Afghanistan well into the 10th century. In fact, Indian military technology was considered very good and was used by the Muslims against the Christian Crusades (particularly, the metallurgical techniques used to produce the so-called “Damascus sword”).

In short, Hindu India proved quite capable of holding its own against the vigorous new religion at the height of its power. Even after the Muslim conquests of the 13th century, the continued resistance of the Rajputs of Mewar, the kingdom of Vijaynagara and the Ahoms of Assam in later centuries could not be faulted for lack of spirit or courage. The “religious vigour” theory, furthermore, does not explain the subsequent failure of the descendants of these same Muslim invaders (now Indian but still Muslim) to fend off later invasions from Central Asia as well as their poor resistance to European

colonization. Again, one cannot fault the likes of Tipu Sultan for lack of courage.

The main factor that seems to have let down Indians, whether Hindu or Muslim, appears to have been the growing technological naiveté after the 11th century — which shows up, for instance, in the willingness to deploy lumbering war-elephants against arrayed artillery as recently as the 18th century. However, this gap shows through in all facets of human endeavor from economic and mercantile prowess to scientific and philosophical enquiry. Even the great Mughal edifices were built without the use of a wheelbarrow but through the mass deployment of brawn. In the end, it is more reasonable to argue that it was civilizational decline that led to foreign domination rather than the other way around. The individual brilliance of a few great monarchs, such as Akbar and Krishnadeva Raya, was not able to reverse the secular long-term decline. As eminent historian Tapan Roychaudhuri puts it: “In terms of ideas and attitudes, mid-18th century India was not at all that different from the country described by Marco Polo.”¹³

It is difficult to establish precisely what caused this fossilization. However, a key factor appears to be the erosion of the spirit of entrepreneurship and the openness to new ideas and enquiry. There are several independent signs of intellectual fossilization at around the 11th century. The most direct comes from the writings of Al Beruni, an 11th century scholar who lived in the court of Mahmud Ghazni and wrote a remarkable book on the

¹³ Tapan Raychaudhuri (2005). *The Mid-Eighteenth Century Background*. In *The Cambridge Economic History of India*, Vol. II Revised Edition. Cambridge, MA: Cambridge University Press.

India of his time. While Al Beruni is not entirely a neutral commentator, some of his comments provide an interesting insight into contemporary Indian attitudes to knowledge and science. Take for instance:

“Their haughtiness is such that, if you tell them of any science or scholar in Khurasan and Persis, they will think you to be both an ignoramus and a liar. If they had traveled and mixed with other nations, they would soon change their mind, for their ancestors were not as narrow-minded as the present generation.”¹⁴

Al Beruni goes on to quote a passage from Varahamihira in which the ancient Indian thinker gives credit to the scientific contributions of the ancient Greeks.

Al Beruni lived in the court of Mahmud of Ghazni and was probably commissioned by him to write the book on India. Clearly, Mahmud took the trouble to learn about his victims. This is what allowed him to make 17 raids into northern India between 1000 and 1025 AD without eliciting a successful response from a country that was still a major economic power. Perhaps it is significant that the Indians did not bother to write an equivalent book about Ghazni.

The process of decline appears to have first taken root in the north and then spread southward. For instance, we know that in the early 11th century the Chola empire in the South was at its height both militarily and culturally. However, writings by later travelers suggest that the closed attitude towards technology, new ideas and the outside world had spread throughout the sub-continent by

¹⁴ “*Alberuni’s India*”, translated by Dr. Edward Sachau, Rupa, 2002.

the 13th century. Writings by Ibn Batuta and Marco Polo show how India had fallen behind the rest of the world. Contrast this with the writings of earlier Chinese and Greek travelers. Not surprisingly, this backwardness began to have a palpable impact on the country's maritime trade and economic prowess. Take for example Marco Polo's comments regarding international trade in the Malabar coast in the early 14th century:

“Let me tell you next that this country does not breed horses. Hence all the annual revenue, or greater part of it, is spent in the purchase of horses. You may take it for a fact that the merchants of Hormuz and Kais, of Dhofar and Shihr and Aden, all of which provinces produce large numbers of battle chargers and other horses, buy up the best horses and load them on ships and export to this king and his four brother kings. Some of them are sold for 500 sagi of gold, which are worth more than 100 marks of silver. And I assure you that this king buys 2000 of them or more every year, and his brothers as many. And by the end of the year not 100 of them survive. They all die through ill usage, because they have no veterinarians and do not know how to treat them. You may take it from me that the merchants who export them do not send out any veterinarians or allow any to go, because they are only too glad for many of them to die in the king's charge.”¹⁵

As this passage shows, the greater part of the country's export earnings were being wasted as a consequence of

¹⁵ “*The Travels of Marco Polo*”, translated by Ronald Latham, Penguin, 1958.

the lack of a very basic technology (and a technology that had been known in earlier times but appears to have been lost). This same closed attitude also shows through in social mores. For instance, caste rules from this time begin to ostracize those who sailed overseas. It is not surprising that from here on, Indian merchants ceded ground to the Arabs, the Chinese and eventually the Europeans in the Indian Ocean.

The injunction against crossing the seas, embodies an astonishing reversal of attitudes for a civilization that had once been at the center of the world's most important maritime trade system. These rules survived well into the early 20th century. When my great grandfather decided to do his doctorate at the London School of Economics in the early 1920s, the family priests forbade him from traveling abroad. Fortunately, he was not one to give in so easily. According to family legend, he spent several weeks studying the holy books and proceeded to prove to the priests that the scriptures did not contain any injunctions against crossing the seas.

But, why did the Islamic invasions not trigger a change in attitude? The Muslims did bring in new technologies (most visibly in architecture, food and warfare) but change seems to have been in the nature of a level shift rather than in the process of inquiry. It is very difficult to gauge why this was so, but the most plausible explanation is that by the time Muslim rule was firmly established in India in the 13th and 14th centuries, Islamic civilization itself was past its peak. By this time, Christian armies had begun the re-conquest of the Iberian peninsula while the Mongols had laid waste the Middle-East. As Prof. Pervez Amirali Hoodbhoy puts it: "One gets the impression that [Muslim] history's clock broke

down somewhere during the 14th century and that plans for repair are, at best, vague.”¹⁶

By the end of the 15th century, Columbus would have discovered the Americas and Vasco da Gama would have turned the Cape of Good Hope and landed on the Malabar coast. Within a few short decades the tiny European nation of Portugal would have established a stranglehold on the Indian Ocean from Aden to Malacca. Portuguese power would eventually give way but, over the next four centuries, a succession of European powers would dominate Asia — the Dutch, the French and most importantly the British. The Muslim world would never again challenge the West militarily or intellectually.

The Importance of a Culture of Openness

The important point is that the cause of backwardness was not so much a problem of intellectual capability but of cultural openness to ideas and risk-taking. The same people, who were capable of inventing algebra and calculus in the fourth century, were unwilling to learn the relatively simple technology of maintaining horses in the 13th century. Once it had been a culture that celebrated its merchant fleets but later forbade crossing the seas.

Of course, India is not the only civilization to have gone into decline because of its cultural inability to generate and internalize new ideas and technologies. China too suffered the same fate. It is well established that in the early 1400s, China’s naval technology was generations

¹⁶ “Science and the Islamic World — the Quest for Rapprochement”, by Pervez Amiralí Hoodbhoy, *Physics Today*, August 2007.

ahead of Europe. Admiral Zheng He led a series of expeditions that visited South East Asia, India and East Africa. There is some speculation that his fleet may even have visited the Americas. Certainly, his ships were capable of making the journey.

It took the Europeans another 300 years to re-invent much of the ship-building technology that was used by Zheng He. Yet, it was not the mighty Chinese but “barbarians” from Europe who would dominate global trade over the next 500 years. Again, it was not due to the lack of initial scientific capability but due to negative cultural attitudes. China’s mandarins did not deem the rest of the world worthy of their interest. Zheng He’s “Treasure Fleet” was burned down and its records deliberately suppressed. Eventually, the knowledge accumulated by the voyages was forgotten and the country’s technological capabilities stagnated and then went into decline. By the 18th century, the country was clearly far behind Europe. Thus, it was a change in cultural attitudes towards innovation and the outside world that led to technological stagnation and eventually to economic and civilizational decline.

Western Civilization too had gone through a similar cycle following the decline of the Roman Empire in the fifth century. In that case too, civilizational decline had been the result of changed attitudes. As the early Christian church consolidated its power over the Roman Empire in the fifth century, it systematically shut down the centers of learning and persecuted scholars for being too “pagan”. The Library of Alexandria — the greatest store of knowledge in the ancient world was deliberately destroyed by Christian zealots in the late fourth century. In 415 AD, the Greek philosopher Hypatia, one of the greatest

woman mathematicians of all time, was killed by a Christian mob in Alexandria. A few schools struggled on for another century till Plato's Academy was shut down under the order of Emperor Justinian in 526 AD. The few scholars who escaped the persecution would take their knowledge and their books to the Middle East, where under the protection of the early Muslim caliphates, the knowledge of the ancients would be rediscovered. It would be another thousand years till scholars like Galileo would challenge the Church in Europe and usher in the Renaissance.¹⁷

It appears that civilizations, from time to time, commit suicide by closing themselves to innovation, entrepreneurship and the outside world. It is not clear why advanced civilizations sometimes chose to deliberately go backwards. However, the fate of the Sanskrit language provides a good guide to how Indian civilization became fossilized.

The Story of Sanskrit

Language is a reflection of a civilization. It is the medium through which people formulate and express their ideas. Therefore, the evolution of a language mirrors the development of the corresponding society. If there is any language that embodied ancient India, it is Sanskrit.

Today we tend to think of Sanskrit as a static language that is used mainly for formal religious ceremonies,

¹⁷ After the "Golden Age" from the 7th to the 12th century, the Muslim world too went into decline. In recent years, there has been some soul-searching amongst Muslim intellectuals about the causes of this decline. An interesting read in this context is Prof. Pervez Amirali Hoodbhoy's article "Science and the Islamic World — the Quest for Rapprochement", in *Physics Today*, August 2007.

rather like Latin is used in Roman Catholic countries of Europe. However, in ancient times it was an active and vibrant language that was used for activities ranging from poetry and drama to science, philosophy, law and mathematics. It was so successful because over the centuries it underwent enormous change in order to accommodate evolving intellectual and social requirements.

First, it must be recognized that Sanskrit was part of a continuum of mutually intelligible dialects. Sanskrit was merely the formal end of the spectrum and was used for legal, academic and administrative purposes. It was also the medium of formal religion and high literature. At the other end of the spectrum were various Prakrits that were spoken in everyday life. Their very names tell the story — Sanskrit literally means cultured or perfected while Prakrit means natural. The point is that Sanskrit was not an isolated and ring-fenced tongue but was a part of a larger milieu.

Second, Sanskrit was constantly evolving and adding vocabulary. The ancient Sanskrit of the Rig Veda (compiled in the third millennium BC) is in many ways closer to ancient Iranian rather than to the language of the epics Ramayana and Mahabharata (probably composed between 1000 and 800 BC). In turn, the language and vocabulary of the great epics is very different from that used by Kalidasa during the Gupta Empire of the third to fifth century AD. Throughout these centuries Sanskrit happily absorbed new words and usages from other languages including ancient Dravidian, Munda and probably even Greek.¹⁸ Many words that are thought to be

¹⁸ “The Sanskrit Language”, by Thomas Burrow, Faber & Faber, 1955; “Rigvedic Loanwords”, by FBJ Kuiper, in *Studia Indologica*, 1955.

Sanskrit words appearing in modern Dravidian languages like Tamil are probably ancient Tamil words that made their way to Sanskrit.¹⁹ In fact, the language was evolving in so many directions that from time to time it had to be standardized by grammarians like Panini in the fifth century BC and Patanjali in the second century BC.

The periodic standardization was very important in the development in Sanskrit. Panini's efforts created a formal language that was used by the educated from Central Asia to the South China Sea. Panini himself was not strictly Indian but what we would today call an Afghan. Unfortunately, over the centuries, the guardians of the language became increasingly preoccupied with the purity of form and vocabulary. More and more grammars were written and the rules became an end in themselves. The language stopped absorbing new words. Eventually Sanskrit was killed by over-regulation. Contrast this with the fate of the unregulated Prakrit dialects that continue to thrive today as modern Indian languages like Hindi, Gujarati, Marathi, Assamese, and Bengali. Clearly, internal over-regulation proved to be far more deadly than foreign domination.

The fate of Sanskrit mirrors that of medieval India. All societies need rules to function effectively. Traditions and rituals provide meaning and a common social idiom. Unfortunately, the intellectual and political leaders of medieval India became increasingly obsessed with regulating everything. There were rules for castes, rules about food, rules for professions, rules

¹⁹ This may be somewhat inconvenient to modern-day Tamil purists who are attempting to remove Sanskrit inspired words from Tamil.

for religious rituals, rules for crossing the seas, rules about auspicious time. Rules, rules, rules. Some of these rules had ancient origins but they increasingly became obsessive.

In the end, India closed off its mind and regulated itself into centuries of decline. Of course, there were moments when Indian civilization would briefly show sparks of its former brilliance but even the exceptions prove the point. The Taj Mahal was built by a half-Mongol emperor and his Persian architects. This does not make the structure any less beautiful or any less Indian. Unfortunately, the Muslim invasions did not tear down the web of regulation but added an additional layer of rules; and this milieu was still in place when the British embarked on their conquest of India. It was only in the early 19th century that this web of social and intellectual regulation began to slowly breakdown.

The 19th Century Re-awakening

The Portuguese were the first Europeans to establish trading posts in India. They were followed by many other Europeans — the Dutch, the French, the Danish and the British. However, till the mid-18th century, these were no more than tiny enclaves. This changed after the British East India Company acquired Bengal after the Battle of Plassey in 1757. Over the next several decades, the East India Company came to directly or indirectly control most of the sub-continent. The British may have conquered India for their own commercial/imperialist purposes but they did have a very positive long-term impact on India's "wounded civilization" by

introducing India to modern institutions, science and the English language. Most importantly, they created an environment where a number of remarkable individuals were able to set about unshackling the Indian mind.

Perhaps the most important of these early reformers were Raja Ram Mohan Roy and Ishwar Chandra Vidyasagar, both Bengalis who lived in the first half of the 19th century. By this time, the glories of ancient India were mostly forgotten. The great works of Aryabhata, Charaka and the Vedic philosophers had not been entirely lost but they were learned by rote without thought to their meaning. Even the short-lived liberal vibrancy of Mughal Emperor Akbar's 16th century court was a fading memory. The disintegration of the Mughal Empire had left the country in chaos during the 18th century. Ram Mohan and Vidyasagar now set about reconstructing the civilization from its ashes.

Ram Mohan Roy was fluent in several languages including Bengali, Hindi, Arabic, Persian and Sanskrit but he realized that a true renaissance would only be possible by providing the country with a means to access the new ideas emanating from the West. Therefore, he fought for the introduction of English in Indian schools and for the teaching on "modern" subjects like Human Anatomy and Mathematics.

The importance of the English language in rekindling India cannot be understated. The language played a very important role in not just opening the country to new ideas but in the rediscovery of its own past. For the first time since the decline of Sanskrit, educated Indians had a common language capable of conveying new ideas. Its introduction by the British may have been a matter of

convenience for the colonial power but, as will be discussed more fully later, the leading Indian reformers of that time was strongly in favour of English.

Vidyasagar was one of the first products of the new approach to learning. He came to Calcutta (now Kolkata) from a remote village to study at the newly opened Sanskrit College in 1829. Over the next few years, he taught himself the ancient Sanskrit texts as well as English and Hindi. Having imbibed the spirit of renaissance, he went on to make major contributions in areas ranging from women's rights and education to Indian language publishing. He even simplified the Bengali script and gave the language its modern form. He is said to have been responsible for the establishment of numerous schools for girls and helped to found Calcutta University in 1857, the sub-continent's first modern university.

Ram Mohan Roy and Ishwar Chandra Vidyasagar were followed by a series of brilliant reformers including Dadabhai Naoroji, Gazulu Chetty, Madhav Ranade and Swami Vivekananda. In virtually every case they were products of the new education system and lived in the "British" cities of Madras, Calcutta and Bombay. The old "Indian" cities of Delhi, Hyderabad and Lucknow produced few reformers.

Most importantly, these 19th century reformers were all very conscious of the need of a wider civilizational re-awakening. Over the next century, their idea of cultural modernization led the Independence movement. Note that throughout this period, the country's intellectual leadership continued to emphasize the need for innovation and cultural openness. Ram Mohan Roy's intellectual successor, Nobel Laureate Rabindranath Tagore

wrote this famous poem in his “*Gitanjali*” collection (published in 1913):

Mind Without Fear (translated from Bengali)

*Where the mind is without fear and the head is held
high;
Where knowledge is free;
Where the world has not been broken up into fragments
by narrow domestic walls;
Where words come out from the depth of truth;
Where tireless striving stretches its arms towards
perfection;
Where the clear stream of reason has not lost its way
into the dreary desert sand of dead habit;
Where the mind is led forward by thee into ever-
widening thought and action —
Into that heaven of freedom, my Father, let my country
awake.*

Unfortunately, Tagore’s warnings against “narrow domestic walls” were not heeded by post-Independence India. Instead, the leadership opted for an inward-looking approach that retarded the re-emergence of India for another half-century. The inward-looking strategy is sometimes justified today as having been the fashion of the time but a leader of the stature of Nehru should have been able to look beyond contemporary fashion. By opting for a closed economic system, he unwittingly perpetuated a very ancient mistake that went back a thousand years and had played an important role in causing India’s decline. However, it is not fair to just blame the Gandhi–Nehru dynasty and

the Congress Party because most of their political opponents were no better. There were many who accused Nehru and the Congress of not going far enough. Moreover, the failure was not merely limited to the economic sphere but extended to all spheres of life. In an extra-ordinary act of cultural policing, it was decreed that all representations of Tagore's work had to be done according to prescribed formula. This is particularly striking since Tagore had dedicated his life to encouraging innovation in literature, art and education. Thus, it was a failure of virtually the entire political and intellectual leadership of post-Independence India. Perhaps, it was the weight of "dead habit" reasserting itself.