Chapter 10

Development by Design - two national development paths

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Part I set out the parameters of an emerging global system of design and development, dominated by a triad of developed regions (Ohmae, 1990). Part II looked in detail at the dynamics of the complex socio-technical innovations essential to this system. Part III looks at the consequences for decision-making in relation to development strategies.

This chapter compares the historical conditions and the reform processes of two countries committed to development towards a Western model since the nineteenth century. The two countries are not comparable in current technological development, although such a review suggests some measures of success from their development strategies. One of them, Japan, is often taken to represent the modernisation of all East Asian economies. This book points out in several places the significant differences in development paths and outcomes in that region. The second country, Turkey is often neglected as an example of modernisation, in part because of the relatively less successful results. However as a secular, predominantly Islamic state bridging between Europe and Asia, it merits attention in the opening decade of a century characterised so far by the threat of the replacement of political division with religious division.

The Western understandings of modernism and development described in Part I date from the middle of the last millennium, derived from the renaissance and related scientific and social developments. For Max Weber, the roots of this revolution lay in the reformation and the emergence of a "Protestant Work Ethic" which facilitated an unprecedented transformation of the production of materials and of culture. It was inevitable that this transformation would affect all the peoples of the world.

Many non-European cultures found the shock waves of Western influence shaking their very existence. Although Turkey and Japan had very different historical and social settings, by the middle of the nineteenth century they both found themselves in a situation where radical transformations were necessary. Each country accelerated the design of its own reform processes in that period with the aim of matching the contemporary (i.e. Western) level of development. Seen from a distance of one a half centuries one nation appears to have been more successful than the other. These countries are worthy of detailed consideration as prototypes for the successful development states which appeared in the second half of the twentieth century.

The preceding chapters have been concerned with the myriad constraints on design outcomes. Viewing national development strategies as a problem of design does not imply a view that the designers had a free hand. Nevertheless, it must be argued that both attempts at social engineering produced significant outcomes of their own. An obvious aspect of the Turkish and Japanese modernisations was that, unlike the West, their leaders had a concrete target for the modernisation process. In consequence the strategies selected to achieve development were the result of a conscious design process for the development of catch-up strategies aimed at the early adopters and pioneers. Unlike the Western countries where modernisation reflected internal dynamics, Turkish and Japanese modernisation sought to reflect these external influences.

Development creates profound effects in the social and economic lives of societies. It also intensely influences and is influenced by the production and usage of technology. The close interaction between social processes and technological outcomes has been described by numerous writers (Mackenzie and Wajcman, 1985; Bijker and Law, 1994). As shown in Part II, technology is not socially neutral and can carry traces of the culture and values that produced it (Latour and Woolgar, 1979; Callon and Latour, 1992). Its usage is also affected by specific cultural settings. The information technologies that underpin the emerging global system are no different. They are products of a Western sensibility, but they are increasingly used in different cultural contexts, as discussed in Part I and II.

Unlike Japan, where military and economic expansion was abandoned in the seventeenth century, the Ottoman Empire was in close contact with Europe from its foundation at the beginning of the fourteenth century. It was one of the cultures most severely affected by the Western enlightenment. The dominant ethnic group in the Empire were Turks who were originally from Central Asia, although all Ottoman Sultans were of Turkish origin, their mothers were overwhelmingly from other ethnic groups). They had been migrating to the West en masse since the eleventh century. With the foundation of the Ottoman Empire in the Anatolian peninsula, their westward advance continued until the end of the seventeenth century. By that time the entire Balkan peninsula and parts of Austria and Hungary were under Ottoman rule as well as Northern Africa, the Anatolian and Arabian peninsulas, the Eastern Mediterranean, and the Northern Black Sea.

The fall of Constantinople to the Ottomans in 1453 ended the Byzantine Empire and according to some authors, the Ottoman Empire became the third and the last of the classical empires by succeeding Rome and Byzantium (Ortayli, 2001).

By contrast, Japan was able to control contact with the West until the middle of the nineteenth century. Unlike the Ottoman Empire which covered a vast geographical area and several ethnic groups, Japan's population was ethnically almost homogenous and it had natural boundaries which allowed outside contact to be minimised. These two facts were advantageous for Japanese rulers who held deep reservations over the impact of foreign influence and had banned foreign travel in 1633 and, six years later, restricted contact with the outside world, expelling foreigners and eventually abolishing the firearms they had introduced (Perrin, 1982). Trade relations were limited to contacts with China and the Netherlands, conducted through the port of Nagasaki.

Although contact was eventually forced on Japan by the West in the person of commodore Perry in 1853, Japan's modernisation process evolved in a more controllable fashion than that of the Ottomans. The related characteristics of clear natural boundaries and a homogenous population seem to be the key to the controllable nature of Japanese modernisation. Indeed, Japanese rulers were highly proactive in designing their reform process in line with their culture in the second half of the nineteenth century. During that time the Ottomans had to concentrate on endless wars with neighbours, fire-fighting the rebellions of various ethnic groups, and pursuing a balance between the often conflicting demands and interventions from the foreign embassies in Istanbul.

Ottoman Modernisation

The Ottoman Empire reached the peak of its power in the sixteenth and seventeenth centuries. Being the "soldiers of Islam against infidels," they felt that their might was not restricted to the battlefield, they also felt that they were culturally superior to any other civilisation in the world. They regarded the European civilisation to be culturally and spiritually inferior. Muslim armies were driving into India to convert the "infidel and backward" population to Islam, and little was known about far away and confined China. During that time Ottomans were also not on good terms with the neighbouring Islamic states.

The Memluk state in Egypt was toppled in 1517, but the victory won against the Persian state was not enough to eradicate it. Subsequent hostile relations with the Persians led to long wars at the beginning of the seventeenth century, which diverted attention from the West. Thus, after a long history of military victories against Western powers, the Ottomans had to sign a peace treaty with Austria in 1606 with problematic terms. Up to that time it was the Ottomans who had dictated the terms of the treaties in Istanbul. However, the Treaty of Sitvatorok had to be negotiated between peers on neutral ground on an island in Danube. Even worse for the Ottomans was the recognition of equality between the Austrian Emperor and the Sultan who, until that time, designated other rulers in official documents by subordinate Ottoman titles (Lewis 2002).

Although the Ottomans did reasonably well in the seventeenth century, they had to face some setbacks in their quest for maintaining superiority against the West. Like the first siege of Vienna in 1529, the second one in 1683 was also unsuccessful, Buda of Hungary was lost in 1686, and Azov by Black Sea had to be surrendered to Russia in 1696. These failures were followed by the Treaty of Carlowitz with the Holy League in 1699 through which substantial territory was lost. According to many historians, the importance of the Carlowitz peace treaty to the Ottomans went beyond territorial losses. Many believe that this treaty marked the beginning of the decline of the Empire and it was a clear indication of the end of Ottoman superiority over Western powers.

Alarmed by these developments, the Ottomans started to think about remedies. On their side not much change has occurred; tools, techniques, and the organisation of the army and navy was mainly as before, so, the West must have changed. They reluctantly concluded that the Western powers were no longer the "inferior barbarians and infidels" who previously had had little to offer culturally, technically, and spiritually. On the contrary, their obvious progress on the battlefield compelled Ottomans to start a long history of attempting to adapt Western tools and techniques. However, this adaptation process had a crucial flaw which continued in the eighteenth century and beyond: since the only objective comparable measure of superiority was military power, the Ottomans concentrated their efforts on strengthening the military directly rather than strengthening the economic and social progress that supported military innovation in the West.

Over the following two centuries, Turkish modernity meant only the modernisation of the military. During the eighteenth century, still firmly believing in their own social and religious superiority, the Ottomans made several attempts to reorganise the military. Many of these initiatives suffered strong opposition from the military itself as well as religious scholars. This opposition sometimes became so intense that the reformist Sultan Selim III who endeavoured to establish a new and modern army corps was overthrown and killed by rebelling Janissariesin 1807[1].

Eventually, one of his successors, Mahmud II, who was a resolute reformer, had to abolish the Corps of Janissaries through a major annihilation in 1826 in order to establish his new and modern army corps.

Unlike the Western world which had a keen interest in the Orient, the Ottomans initially neglected civil contact with the Occident. While both Christians and Muslims had to travel to Middle East for pilgrimage, there was little motivation for Ottomans to pursue civil contact with the Westerners. Although increasing numbers of travel books and accounts of the Westerners in Ottoman territories were published from the beginning of the second millennium, the opposite was not true. Only during the eighteenth and nineteenth centuries did the Ottomans develop a genuine interest in the Western world. The state sent resident ambassadors to Western capitals, Christian minorities sent their children for education, and Ottoman merchants established trade contacts. Increasing civil and commercial contacts in the nineteenth century clearly showed Ottomans that they lagged not just in the military field but also economically and socially. Nevertheless, subsequent reform attempts continued to be mainly in the military area.

Two major trends emerged among the Ottoman intellectuals. The first line of thought blamed the society for not correctly practising their religion and therefore being punished by backwardness. Proponents of this view were mainly the religious scholars who urged a return to tradition. The second line, which endorsed modernisation and Westernisation of the society, was promoted largely by the military and civil bureaucracy who were relatively open to new ideas and practices. However, due to the extremely complicated structure of an Empire that had subjects from three major religions and more than fifty ethnic groups, their suggestions for modernisation were highly diverse.

One of the key departments of the bureaucracy was the Translation Office, founded as a result of increasing contacts, both peaceful and hostile, with the West. Initially the main body of staff was drawn from Greeks in Istanbul, but after the Greek insurrection in 1821 they were replaced by Muslim ethnic groups. As the most significant window to the outer “developed” world the Translation Office acted in effect as a Ministry of Foreign Affairs. It became so important that by the second half of the nineteenth century the higher state posts were filled by its bilingual or trilingual staff rather than other departments of the bureaucracy and military.

Although Ottoman leaders could not anticipate the consequences, the French revolution had a profound effect on the Empire. Like most other empires of the time, the subjects of Ottoman Empire consisted of several ethnic groups and religions. The non-Muslim ethnic groups also had a hierarchy among themselves: Greeks were regarded as a higher rank than Armenians who were in turn in a better position than Jews. Each ethnic and religious group was headed by a member from their community who officially represented the group in the Empire. Although subject to some constraints, they were allowed to practice their religion freely. Above all these groups stood the Sultan with his unchallenged authority.

Understandably, this model did not fit well with the *liberté* - *égalité* - *fraternité* motto of the French revolutionaries which was passionately propagated by their embassies in all countries. Although these slogans were dangerous for all empires, they were even more so for the Ottoman Empire with a very heterogeneous population and a dwindling power. It didn't take much time for the waves of nationalism to reach the Empire, and the Ottomans saw in despair that most of their subjects were no longer prepared to be subordinate to the Sultan. The situation was exacerbated by the fact that the world powers started demanding more rights for the Christian population of the Empire. As an important consequence, the Greek uprising in 1821 led to the establishment of the Greek state in 1829.

The Greek uprising took place during the reign of Mahmud II who had been in a very weak position when he ascended the throne in 1808. As a result of intense internal unrest, mainly stirred up by local lords, he had to sign an agreement *(Sened-i Ittifak)* in 1808 with them for "consultation against threats to the Empire." However, when he established the order, the copy of the document simply disappeared from the Ottoman archives (Ortayli 2002) and everything continued as before. Nevertheless, Mahmud had to endure a humiliating defeat against one of his subjects, the ruler of Egypt Kavalali Mehmet Ali Pasha and his son and even had to call upon his arch enemy, Russia for help.

Mahmud was one of the most Western oriented Sultans, and he firmly believed that many things were going wrong in the Empire and something had to be done. This view was shared by everyone in the Empire except die-hard traditionalists. The problem was what and how to change. Should the modernisation mean Westernisation, or should a new way be found for modernisation?

Mahmud's solution was to adopt Western methods and organisations eagerly and to the extent that he could. To this end, although he himself was a composer of Ottoman music like many of the sultans, he invited Giuseppe Donizetti, brother of Italian composer Gaetano Donizetti, to establish a Western style orchestra in the palace, set up new army corps with Western uniforms and he himself wore Western-like clothing. This was too much for conservatives who called him "the infidel Sultan."

In 1838 with an economy close to bankruptcy, Mahmud had to sign the Baltalimani Trade Treaty with the British. This treaty commanded even more privileges for British merchants in addition to existing ones. One item in the treaty was the abolition of internal customs for British merchants, while these continued to be applied to Ottoman merchants (Aksin 1988). As a result, imported manufactured goods flowed into the country, strangling a large part of local manufacturing that had no means to compete. According to many historians, the Baltalimani Treaty completed the course of Ottoman economic, and thereby political, submission to the West.

After Mahmud's death in 1839 his son Abdulmecid became the Sultan at the age of 17. He had had a Western oriented education along with a traditional one, probably a good command of French to the extent that he subscribed to several Parisian magazines, and was fond of Western classical music. Unlike his father who had ordered the last open political executions in the Empire and thereby slaying most of the Janissaries and several rebels, he did not have to order executions, the order that he hated.

However, everything seemed to be in a terrible mess in the Empire. The new army was defeated, the navy was hijacked to ex-subject and new rival Egypt, and rebellions were common in the Balkans and the Arabian peninsula. In this environment he defended Mustafa Reshid Pasha, former ambassador to London and Minister of External affairs, against conspiracies in the palace and commanded him to proclaim the Edict of Reorganisation *(Tanzimat Fermani)* on 3 November 1839. This was a key event in the Empire, occurring in very turbulent times. The situation was so tense that the Pasha, unsure whether he would able to return home, is said to have said farewell to his wife and children in the morning of the proclamation (Turkone, 1998).

The Edict started the period known as *Tanzimat* (reorganisation) in the Empire. The 17 year old Sultan's contribution was limited; in that it is widely accepted to be the design of the bureaucracy, notably Mustafa Reshid with the "assistance" of the British embassy. It was mainly a document of the Sultan's pledge to limit his power and to reorganise the state. It started with a statement that "the debility of the state and its subjects in the last 150 years is the result of deviating from Islam and its holy law *sheria."* However, there was no doubt that in a matter of "five to ten years" the Empire could start another epoch of glory and might, provided that it adhered to Islam as before. This must have been to soften what followed: the non-Muslim population would be granted equal rights with Muslims.

The Sultan went on to pledge that there would be no more arbitrary use of power, no political executions, and no confiscations without a court order. The effects of the edict went beyond its contents. Together with the

1856 Islahat Fermani *(Edict of Reform),* the quest for change paved the way to a limited modernisation and modest Westernisation in the Empire.

Perhaps the most important statement of the edict was the pledge that there would be no more confiscations without a court order. Unlike Western feudal lords and the newly born class of bourgeoisie who were able to accumulate capital, Ottomans regarded this potentially too dangerous for the state. Thus, getting rich was not safe for the subjects of the Empire who might see their wealth confiscated at any time. This was one of the most important differences between the West and Ottoman Empire where Western style feudalism and capitalism could not flourish. With profound effects towards the end of millennium, obstruction of wealth accumulation by tyrannical means and the resulting lack of capital seem to be the key to understanding the decline of the Empire.

The period of *Tanzimat* covered most of the nineteenth century, leading to important changes in the state and the society. Traditionalists opposed and ridiculed it for creating rootless admirers of the West, while supporters of modernity backed it in the hope of progress in the quest for a route away from backwardness. In line with the *Edict of Reorganisation* a Criminal Code, partly inspired by the French code was issued in 1840. In 1850 a commercial code, also partly inspired by the French, was issued.

During the reign of Abdulmecid (1839-1861) and his successor Abdulaziz (1861-1876) two important issues became institutionalised in the country. Firstly, the chronic shortage of finances forced the state into ever increasing external and internal debt often on very unfavourable terms. This reflected both frequent wars and the extravagance of the palace. In the draft budget for years 1861 and 1862 education and investments for civil works accounted for 0.3 percent, while 24 percent was for debt payments, with the palace getting 8.5 percent for its expenditures (Aksin 1988). Secondly, it was becoming increasingly difficult to keep non-Turkish ethnic groups in the Empire voluntarily. Sometimes encouraged by world powers such as Russia and influenced by Greek independence and the French Revolution, both non-Muslim and Muslim subjects started several rebellions to gain their sovereignty, and many of these were successful. Nevertheless, nationalism also affected the Turks, who were regarded as the main ethnic group in the Empire.

Three main views emerged among the Ottoman intellectuals who were desperately seeking a way out. The first view was to transform Ottoman Empire in such a way that the ethnic groups would “melt in the pot” like the United States. In the course of the century, however, it became obvious that the increasing national-consciousness of ethnic groups were striving to gain their independence rather than yield to assimilation. The second view was to call all the Muslim subjects for an Islamic revival under the leadership of the Sultan as *Calif*, "God's shadow on the earth." This view also seemed to be unfeasible with the frequently rebelling Muslim Arabs. The third view built on Turkish nationalism: national unity for the Turks. However, perhaps reflecting their position as the main element of the Empire, the national awakening of the Turks would have to wait until the first quarter of the twentieth century, only after the Empire collapsed along with its counterparts in Russia and Austria-Hungary.

Political and social unrest led to the overthrow of Abdulaziz in 1876. After the brief reign of Murad V who was understood to be mentally unhealthy, Abdulhamid II rose to power the same year and stayed there for the next 33 years. He had promised to give more freedom to his subjects, proclaim a constitution, and establish a parliament with elected members from all ethnic groups. He kept his word; the first Ottoman constitution and parliament were declared. In 1877 the parliament assembled after the elections and an atmosphere of freedom prevailed in the country. However, Russia's declaration of war on the Empire in 1878 became the excuse for Abdulhamid to abolish the parliament immediately. The Ottomans lost the war and the Russians advanced as far as the suburbs of Istanbul before retreating back to Balkans.

Draining resources to the end, the war exacerbated the financial situation. Repayment of internal and foreign debts became impossible. Abdulhamid was obliged to establish an organisation *(Duyun-u Umumiye)* in 1881 with the authority to sequester some of the state's income at source. It had administrators and representatives from Britain, France, Germany, Austria-Hungary, and Italy along with Ottoman members. It marked a further stage in the financial bankruptcy of the state.

Over the subsequent years Abdulhamid's stringent administration led to the constitution of opposition in the country. In 1889 five students of the Military Medical School formed a clandestine club which became an active dissident organisation in 1895. Named *Ittihat ve Terakki* (Union and Progress), this organisation had the objective of saving the state from total collapse. Since the Sultan's detectives made any kind of activities difficult to conduct domestically, many of its young and ardent members had to flee overseas. Known as Young Turks in the Western capitals, they were influenced by the secular and emancipatory ideas of the age.

One of their leaders, Ahmed Riza, became a passionate positivist. His bold opposition to religion was not uncommon among his fellow Young Turks. In the first decade of the twentieth century opposition from the young officers led Abdulhamid to appoint them to posts far away from the capital, mainly in Seloniki. However, in the cosmopolitan atmosphere of this city young officers and bureaucrats joined *Ittihat ve Terakki* in increasing numbers. Determined to save the country, their fight against the rebel Bulgarian guerrillas in the Macedonian mountains sharpened their patriotic feelings. However, deciding on what exactly to save was a bit problematic. Although they were military and civil bureaucrats of the Empire, they were increasingly convinced of the difficulty of keeping many reluctant nations in the Empire and the necessity of a homogeneous population and the ideology of nationalism to motivate it.

As a result of increasing unrest, Abdulhamid reluctantly declared the second constitution and reopened the parliament in 1908. The next year a revolt erupted in Istanbul. The rebels supported the Sultan and demanded a return to the roots of the empire and abolition of the “infidel” practices and institutions which they believed as the chief reason for the rotten situation of the Empire. With the main body of the officers *Ittihat ve Terakki* members, the army in Seloniki advanced to Istanbul and suppressed the revolt. One of its members was a young officer named Mustafa Kemal. Abdulhamid, suspected of organising the revolt, was overthrown and expelled to Seloniki. Although *Ittihat ve Terakki* placed Mehmed V on the throne at the age of 65, it retained the real power.

The Balkan war which erupted in 1912 ended with another defeat, this time resulting in the loss of the entire Balkan territories. The Empire was also on the losing side in World War I, this time resulting in the occupation of the heartland of the Empire, the Anatolian peninsula, by the victors. In 1918 Mehmed V died, and *Ittihat ve Terakki* leaders had to flee from the country. Mehmed VI, the last Ottoman Sultan, ascended the throne which was by then little more than symbolic.

After the occupation of the Ottoman capital Istanbul by the victors, Mustafa Kemal started a campaign in Anatolia with the objective of expelling the occupation forces and founding a new state. The war against Greece which occupied inner and Western Anatolia was won in 1922. The same year Mehmed VI had to flee from the country and this event marked the end of the six century old Ottoman Empire. The decline of the Empire in the last few decades was so dramatic that across three continents around two million square kilometres of territory was lost over which 24 states were subsequently established.

The new Turkish Republic was declared in 1923 and the difficult task of nation building started.

The Balkan war, World War I, and the war against the occupation forces had resulted in huge loss of lives in the eleven years prior to 1923. Even worse, the most valuable and the scarcest resource, the educated workforce, was almost completely lost. Industry was almost non-existent and the new Republic, being regarded as heir to the Empire, had to pay the Ottoman debts.

Mustafa Kemal, who took the surname Ataturk, became the first president of the republic. He was determined to design a new society and modernise the nation through Westernisation. Unlike the Western oriented Sultans who had to carry the unbearable burden of the past, he had the advantage of starting with an empty white page and a fresh design process. Using this opportunity, he initiated many reforms to transform the society towards West: the Gregorian calendar was brought in, the Latin alphabet was adopted instead of Arabic, a new dress code was introduced for both sexes, the institution of the *califate* was abolished and the last *calif* Abdulmecid was expelled from the country. Perhaps the most important reform of all was the adoption of a new constitution in 1924 which emphasised the secular nature of the new state.

Most of these reforms are now deeply rooted in the contemporary Turkish society, the only secular state in the Muslim world. However, unlike the West where such transformations have occurred usually over very long time frames and through the internal dynamics of the society, Turkish reforms were undertaken over a short period and imposed on the society by an intellectual elite, sometimes by force. There was also another important difference with the West: Super-structural institutions such as secularism are the products of a particular economic order, namely capitalism. There is no guarantee that the reverse process can succeed; official secularism in Turkey did not create a robust working capitalism in the eight decades of the Republic.

Although reduced in size, a large percentage of the population still lives in rural areas striving to earn a livelihood with inefficient agricultural methods. The relationship between the state and religion is also still somewhat uneasy. At the beginning of the new millennium dispossessed masses tend to perceive their plight as a consequence of retreating from religion, whereas the state sees the “backward interpretation of the religion” as the source of most of the ills in the society and a threat to its very existence.

After the foundation of the republic it was obvious that the capitalist way of development was not possible due to the lack of capital, therefore a protectionist development path was preferred. Nevertheless, the creation of a capitalist class was a priority for the republic’s government. With hindsight it could be said that over then the course of eighty years, such a class was indeed created, but with the major flaw of direct dependence on state funds, incentives, and custom tariffs. As the most important controller of resources, the state had and still has the power to determine “who will get what.” This applies not only to the classes in the society, but also to individuals or groups of capitalists who had to develop good relations with the bureaucrats. As could be expected, this is a situation which provides a fertile ground for corrupt practices. To some extent, this resembles the practices of the Ottoman State that also strove to be the sole controller of the economic resources of society.

The Key Philosophical Debate

Religion has always been a very important factor in the social life of Ottomans. After the defeat of the Memluks of Egypt by I. Selim in 1517, the Ottoman Sultans became *calif,* the shadow of God on earth. Although the sultans did not emphasise this appellation until the nineteenth century, it could be regarded as a strengthening factor on the role of religion in the society[2].

Two debates of the same nature, one before and one after 1517, seem to be decisive in Ottoman history and in the history of Islam. The debates were about the nature of philosophy and the role of belief and intellect. In fact, the discussants were continuing the debate of several centuries earlier between two Muslim scholars, Al-Ghazali (1058-1111) and ibn Rushd (1126-1198) who is known as Averroes in the West. Although both were devoted Muslims, Averroes was more open to new ideas and schools of thought than his predecessor, possibly due to the high level of Andalusian civilisation in Spain where he spent most of his life. A closer look to their teachings would be illuminating:

Al-Ghazali started his scholarly life as a sceptic but later stood rigorously against all schools of thought other than one strict interpretation of Islam and he is regarded by many as a scholar whose works have been influential in closing the door to philosophy and other schools of thought in the Muslim world for centuries.

As a reply to Al-Ghazali's book *Tahafut al-Falasifa* (The Incoherence of Philosophers) in which reason is criticised as opposed to pure reflection from scripture, he wrote *Tuhafut al-Tuhafut* (The Incoherence of Incoherence) where Averroes criticised Al-Ghazali's orthodox interpretation of the religion. In his books his main point was that philosophy and religion do not need to contradict to each other. He argued that if there is an obvious conflict between Holy Scripture and demonstrative reasoning, then the source of the conflict must be the metaphor in the scripture.

This debate, which took place more than three centuries prior to Galileo and Bruno, continued in the Ottoman period. In the reign of Mehmed II (The Conqueror 1451-1481) and Suleiman I (The Magnificent 1520-1566) the debate was mainly whether to teach the "reason" of Averroes and his commentaries about the thoughts of the ancient Greek philosophers along with Al-Ghazali's "pure reflection from the holy scripture" in educational institutions. Averroes lost. As the highest authority in religion and related sciences, Al-Ghazali's victory closed the door to critical thought in the Islamic world for centuries. However, as the re-discoverer of Aristotle after centuries, "The Commentator" was taught extensively in the Western universities after his death. According to many people including some Muslim scholars, the Ottoman way of interpretation of religion and denial of philosophy carried its seeds of the later decline of the Empire.

However, it must also be noted that not every historian agrees with this causal explanation. While orthodox Muslim scholars maintain that all ills are the result of retreating from religion, there are also some researchers who argue that Islam had little to do with the decline. Karpat (2002) contends that the Ottoman elite constructed a modernisation theory to protect their position and maintain themselves as architects of the transformation.

This theory was based on the argument that all flaws of the state resulted from the weakening of the authority of the centre. As usual in such cases, the proposed remedy of modernisation was to strengthen the authority which resulted in unanticipated consequences within the fragile and delicate social structure and this in turn laid the foundation of the collapse of the state. He further maintains that although the conditions for Ottoman modernisation were very favourable in the sixteenth century, that opportunity was wasted due to several factors. These included the heterogeneous and partly nomadic population, extreme central control of economic resources, and the birth of a new bureaucratic social class whose attention focussed on wealth rather than the process of wealth production. The main concern of this new bureaucracy was to sustain its very existence and maintain strict control of central authority over economic resources.

Unlike the Japanese and Russian modernisations where bureaucracy was seen as a service provider for the needs of the greater society, Ottoman bureaucracy became the major consumer of resources with little contribution to the modernisation process of production and wealth creation. Thus, according to Karpat, the role of Islam was marginal in the decline of the Empire. It became the scapegoat for the intellectuals who were unsuccessful in establishing a genuine ideology and who failed spiritually, humanly, and intellectually.

Japanese Modernisation

Unlike most of the Empires of its age, the Emperors of Japan had only a minimal involvement with political affairs during the second half of the previous millennium. As "Heavenly Sovereigns" they were believed to descend from the Sun Goddess and had a semi-divine status with symbolic authority. Political power moved to court officials and, by the twelfth century to the *shoguns*, military lords who governed the country with excessive power. The *shogunates* were dynasties in which a family member succeeded the *shogun* on his death. There were three *shogunates* between 1192 and 1868: Minamoto (1192-1333), weakened after successfully repelling two Mongol invasion fleets, Ashikaga (1338-1573), which degenerated though internal squabbles into civil war, and Tokugawa (1603-1868) which achieved two and a half centuries of stability at the cost of national seclusion.

As the foremost authority in the political issues, the *shoguns* had the ultimate authority over *daimyo*, the territorial rulers who controlled a specific area for agricultural production. *Daimyo* also had to provide military and financial support to the *shogun* when requested. Numbering between 250 and 300, the *daimyo* also had ranks, the highest being those having kinship with the *shogun's* family.

With the Ashikaga *shogunate* unable to control the country, Japan was in political turmoil in the middle of the sixteenth century. Bloody wars among the *daimyo* for territorial control resulted in the victory of a few, notably Nobunaga. With the help of locally produced copies of Portuguese firearms, he gained control over a large area and installed Yoshiaki as the last ruler of the Ashikaga *shogunate* in 1560. After overthrowing Yoshiaki thirteen years later he extended his power and controlled increasingly more territory. After his assassination in 1582, power was grasped by one of his generals, Hideyoshi, who continued his master's work and completed the military unification of Japan in 1590.

Before his death in 1598 Hideyoshi named five major *daimyo*, one of them Tokugawa Ieyasu. Although all five *daimyo* had pledged to make Hideyoshi's infant son *shogun* when he became an adolescent, they soon became rivals in pursuit of power, the result being a major battle in 1600 which ended in victory for Ieyasu. Three years later he was appointed as *shogun* by the Heavenly Sovereign and the last *shogunate* dynasty started.

The Tokugawa Shogunate

The Tokugawa house, which reigned for over two and a half centuries, began by securing its position in the country through the subordination of the *daimyo* and the remaining warlords. Unlike the previous two *shogun* dynasties, they asserted the right to levy taxes and proclaim laws. After tranquillity and national unity was totally established in the middle of the seventeenth century, Japan began a long history of economic and social development.

Rural communities initiated small scale enterprises for producing agricultural goods for the market, and a merchant class emerged which enjoyed the quickly developing infrastructure such as roads. Due to the peaceful environment, some of the *samurai*, the professional warriors, became competent professional local administrators under the authority of the *daimyo*. Ever increasing trade and a quest for a high living standard resulted in the rapid urbanisation of the country. Thus, by the end of the Tokugawa period Japanese living standards were among the highest in the world, comparable to England and USA according to some estimates (McClain 2002).

Japan’s traditional Shinto religion peacefully coexisted with Buddhism, an import from the Asian mainland. Religious shrines usually contained chapels of both religions. As long as the social order was maintained, *shoguns* and *daimyo* had nothing against either religion. Neo-Confucianism, another import from Asia, also found its way to Japan in the seventeenth and eighteenth centuries. Its emphasis on obedience to authority was exactly what the *shoguns* needed after centuries of chaos and turmoil.

However, the Tokugawa rulers were not prepared to welcome all religions. Western traders and seamen brought not only goods and technology with them, but also Christianity. By the beginning of the seventeenth century it is estimated that around 300,000 Japanese had converted to Christianity. This alarmed the rulers who were confident that the new religion with a “jealous God” would in no way coexist peacefully with the existing ones. It was also regarded as foreign and pernicious with little or nothing in common with Japanese traditions and way of life. Consequently they banned Christianity in the country and initiated a repressive campaign resulting in its eradication from Japanese soil during the first half of the seventeenth century. In addition, foreign trade was strictly regulated, foreign travel was prohibited, and foreign ships were barred from Japanese harbours. The only exceptions were Dutch and Chinese ships which could only visit Nagasaki, with the Dutch traders confined to a small artificial island in the harbour.

Unlike the Ottoman Empire where the rulers mistrusted subjects who became wealthy, Japanese rulers had nothing against the accumulation of capital in private hands. On the contrary, they actively supported the well-off *daimyo*, merchants, and peasants in the hope of collecting more tax. Thus, pre-capitalist forms of production blossomed in Japan during the Tokugawa period. Mitsui is a good example of the course of the economic development in Japan. After a long history serving their *daimyo* as *samurai*, the Mitsui family opened a sake brewery house after the Tokugawa rulers established tranquillity in the country. Encouraged by the profits, the family started another business in money lending. In 1673 they decided to invest their money by establishing a drapery house which after a few decades became Japan's largest store. Mitsui Trading Company and Mitsui Bank were founded in 1876 and the next year the trading company established its first overseas office in Shanghai. Before World War I it had dozens of offices in Asia, Europe, and America (Mitsui, 1977).

This pattern of development resulted in the emergence of Japan's *zaibatsu*: groups of companies owned and operated by single families, as key players in the modernisation process. Such a move would have been unthinkable for the Ottoman companies which commanded neither capital nor know-how of production and trade in such proportions.

Morris-Suzuki (1994) argues that the Tokugawa period saw the development and consolidation of a wide range of craft skills which proved of great value in the assimilation of foreign practices in the nineteenth and early twentieth centuries. The foundations laid the late Tokugawa and early Meiji periods created an absorptive capacity (Cohen and Levinthal, l990) which was lacking in the Ottoman empire.

Thriving trade and artisanship together with increasing living standards led to a flourishing cultural life in Japan. By the beginning of the nineteenth century there were hundreds of bookstores and rental libraries in the country and each year thousands of new titles were produced, ranging from serious works of scholarship to travel guides. Burgeoning curiosity about other locations in Japan, the ancient history of the country, the strange habits of bizarre barbarians, and countless other topics produced a strong demand for books which were affordable to the general public (McClain 2002).

The books were not only of local origin; some were translations from Chinese and Western languages. The prohibition of foreign books was abolished in 1720 except for books on Christianity. One of the first books to be translated was about human anatomy, previously a proscribed topic. Upon studying dissection of the body of a criminal who had been executed, it was observed that the Dutch translation of a German medical book correctly designated human anatomy. This led to an increased appreciation for Western science and medicine and more translations from the West as well as producing dictionaries.

The Ottoman situation was very different. Although the non-Muslim minorities had established their printing houses as early as the fifteenth century, they were allowed to print only in their own language. Muslims had to wait for a printing house until 1727. However, after printing a total of 17 titles this house was closed in 1743, only to be reopened in 1784 (Aksin 1988). The reason for its closure seems to be manifold: Some religious devotees did not want the Holy Scripture to be affronted by an infidel invention, and more importantly there was not adequate demand for reading other than the Holy Koran which was hand-written (Ortayli 2001). The resistance of the calligraphers is unlikely to have been a significant factor, a strong demand for reading and curiosity would have been reflected in level of demand which would be difficult for calligraphers to obstruct. It is striking that the total number of titles in the entire Ottoman period printed up to the collapse in 1922 is between thirty and forty thousand, many of which were religious texts (Ortayli 2001). Books of a scientific or practical nature were a small fraction in that amount.

Although the Tokugawa period provided tranquillity and economic growth for some, not everyone was happy with the rule of the *shoguns*. Some *samurai* successfully transformed themselves into prosperous merchants or local administrators. However, others of lower rank were distressed by diminishing stipends and declining importance in society. Poor rural families were also distraught by high levies, low prices of their products, and occasional famine as a result of climatic circumstances. Thus, the number and intensity of peasant rebellions gained momentum in the first half of the nineteenth century.

Encouraged by the British victory in the 1839-42 Opium War against the Chinese who wanted to prohibit the free trade of opium by the British in their own territory, the Western powers started to press the *shogunate* to end its policy of isolation. In 1853 Commodore Perry delivered a letter from the US president requesting an end to economic seclusion and the start an era of “peace and friendship” by opening Japanese harbours and soil to free trade. Perry left Japan indicating that he would come again soon with a larger force if the request not fulfilled.

As promised, Perry arrived next year again in line with the rules of the gunboat diplomacy of the era. Anticipating bitter criticism from traditionalists but having little option other than yielding to the Americans which could easily overcome the Japanese defences, *shogunate* rulers reluctantly signed the treaty of “peace and amity” between the US and Japan. Within a few years similar treaties were concluded with Britain, Russia, and France.

As expected, yielding to foreign demands led to an uproar of criticism in the country. Under pressure the *shogunate* decided to get the support of the Heavenly Sovereign for the new policy of opening harbours to foreigners. However, this proved to be a severe mistake: Emperor Komei was decidedly against the new policy. The only option left to the *shogunate* was the ruthless suppression of the dissidents. Several of them were arrested and some were executed. In the course of the 1860s Japan was again in turmoil with the suppression of dissidents and assassination of *shogunate* officials. Destabilised by a series of severe riots and civil unrest, the

Tokugawa *shogunate* collapsed in 1868, ended by a decree of the 15 year old emperor Meiji who had ascended the throne in 1867.

The Meiji Restoration

The long reign (1867-1912) of Meiji, the so-called Meiji restoration, turned out to be an extraordinary example of modernisation which created contemporary Japan. For many, the 1868 Meiji Restoration marks the birth of modern Japan, but the change was neither a Norman Conquest nor a French Revolution. As dominant groups in the old regime weakened, subordinate or similar elements moved into their place (Mason and Caiger 1972). Under the slogan *fukoku kyôhei* (rich nation, strong army) the Meiji government sought to establish a prosperous country that remained free from colonisation by any Western power. In practically all major industries the Meiji Government took the initiative (van Wolferen, 1990).

This epoch became a model for many nations with a strong desire for modernisation, but sceptical of Westernisation. Its appeal to many conservative movements in the less developed world is the concept that Western science and technology could successfully be adopted without substantial change in the traditional values and without embracing the Western way of life and customs. This argument is problematic for two aspects: firstly, it assumes that Japanese society has not changed much during the period of modernisation. This is not true, because although the difference between Japan and a Western society have always been and will always be greater than, say, that of France and the US, Japanese customs and traditions have also changed substantially during the course of and as a result of modernisation. Secondly, it implies that science and technology can be independent from their cultural setting and that they have little power to influence the culture of a society. This is also not true when one observes the rapid diffusion of real virtuality tools such as multimedia, video games, karaoke, cable television, and computer mediated communication in Japan and the resulting cultural transformations (Castells, 2000).

The year the last *shogunate* was toppled, Meiji proclaimed the *Charter Oath* which showed some similarity to the Ottoman *Edict of Reorganisation.* Both decrees were indications of a new era and sincere attempts to modernise Eastern societies to catch up with the West which was clearly understood to be way ahead. With this disparity in mind, both empires sought to develop good relations with Western powers and pledge to uphold the rule of law.

Radical reorganisations were realised in Meiji's first few years. The Confucian based social classes were reordered by redefining the rights and duties of *samurai*, peasants, merchants, and artisan. The *daimyo* and their domains were abolished in 1871, replaced by prefectures. In 1873 Land Tax Reform was proclaimed with the objective of a “burden to be shared equally among people.” Students and several missions were sent to Western countries with the objective of learning about society, science, and technology. Most significant of such expeditions was the Iwakura mission in 1871 where government leaders visited the US and Europe for a systematic investigation of the West, its institutions and technology. The mission and its successors recruited Manchester-based engineers to establish British style industrialised textile mills in Osaka, sought medical and pharmaceutical technology from Germany, and agricultural innovations from the United States.

In 1872 a Code of Education was issued which mandated four years of compulsory primary education for both sexes. Inheriting the robust education infrastructure of the Tokugawa period with abundant teachers, schools, and textbooks, the Meiji administration made reasonable progress in its first years, providing primary education to 60 percent of boys and 20 percent of girls by 1880 (McClain 2002). This contrasted with the Ottoman Empire where, according to Karpat (2002) during the 1870s only 15 to 20 percent of Muslim children attended schools, many of which had closed by the end of the century. The reason for closures was, as usual, shortage of funds. In 1894-95 education expenditure was less than 0.05 percent of the total income of the state while the army and navy got 70 percent. Although primary education was made compulsory from the beginning of the nineteenth century, the statute was neglected and the number of schools and teachers were nowhere near adequate.

It must also be stated that during that time Ottoman rulers had to deal with different problems from their Japanese counterparts. The establishment of a high school in Istanbul is an example of the difficulties facing modernisation in the Empire. The Ottomans had several education systems in which each religious and ethnic community had its own schools. When the shortage of educated people reached alarming proportions, Sultan Abdulaziz founded a high school *(Mektebi Sultani – Galatasaray Lisesi)* in 1868 which was to have a secular education system and teach French along Turkish and other community languages.

The school was also supposed to unite subjects from all ethnic groups under the banner of Ottoman ideology and it was intended to be an important milestone in the modernisation process. However, upset by the idea of secular instruction and feeling threatened by their loss of control of education, Catholic, Orthodox, Jewish, and Muslim community leaders protested against the new school and prohibited their community members from attending it. Even Pope Pius IX in the Vatican threatened to excommunicate Catholic parents who sent their children to the new school and the Russian Tsar demanded the school to be closed without delay unless a similar Russian-teaching one opened immediately. Indifferent to the protests that decreased over time, the Sultan eagerly supported the school and *Mektebi Sultani*, which remains a distinguished institution today, became a very successful establishment that provided elite cadres to the Empire as well as religious leaders to some Christian communities. However, economic, social, and cultural conditions in the empire were far from ideal to establish many such institutions in the country. It was too little, too late.

Government influence was evident in Japan’s moves to establish universities (starting with the University of Tokyo in 1877), which were essentially agencies for training bureaucrats and not properly equipped to conduct research (Itakura and Yagi 1974). Gooday and Low (1998) describe the carriers of the foreign employees were used to instruct Japanese scientists and engineers in the Imperial College of Engineering which took a more practical approach than the Universities. At this point, the only foreign equivalent was the Zurich Polytechnic Institute. Despite the trauma of the arrival of the “Black Ships” of Perry’s naval squadron, the late Tokugawa period had seen the refinement of indigenous technologies with input from Dutch and other foreign sources (Morris-Suzuki, 1994).

It was understood by the Japanese and Ottoman rulers that one of the key characteristics of Western societies was the abandonment of the arbitrary use of power. They carefully observed the governance of society according to rational and secular laws. Considering this an important step in modernisation, Meiji proclaimed the Japanese constitution, written with input from Western consultants in 1889. The constitution stated that although the emperor had the utmost and sacred authority with power to declare war and peace, he and other rulers had to govern the country according to the laws. In Japan these tentative steps towards parliamentary democracy also echoed bureaucratic imperatives. When the National Diet opened in 1890, Meiji rulers created a weak parliament and sought to counterbalance it with a strong bureaucracy, staffed by their own supporters. The parliament became concerned with ratifying rather than initiating policy (Johnson 1983). In contrast, the Ottoman constitution was abolished immediately after its proclamation.

Thus, unlike the Ottoman Empire which was doomed to an inevitable collapse, the Meiji restoration had successfully transformed Japan from an agrarian country to one on the path of industrialisation by the end of the nineteenth century. The war with Russia in 1904 and the subsequent occupation of Korea led Japan on a path of mimicking the colonial expansion that had underpinned the economic development of the Western powers in the previous century.

Cultures and Consequences

One and a half centuries after the Ottoman *Edict of Reorganisation* and the Japanese *Charter Oath* one can retrospectively evaluate the success of both modernisation attempts. The Ottoman modernisation endeavour did not bring success, even in terms of the survival of the Empire. The sixteenth century superpower failed to compete with Western rivals that produced an unprecedented achievement in social and economic development.

A comparison between Japan and Turkey in one key area of nineteenth century technology – railways – is instructive.

Railway development under the Ottomans involved either government sponsorship of strategic lines, such as the Hedjaz and Baghdad railways, or privately sponsored lines in areas of high demand. As a result the national network was far from complete, with large areas of population still without rail access when the new Turkish Republic founded a state railway company in 1927. The process of buying out the surviving private lines was not completed until 1948. British interests in particular were ambivalent towards the development of overland routes towards India in competition with the Suez Canal. German assistance was used to develop lines in Anatolia and the Baghdad Railway, from which British investor were barred.

In Japan the government was keen to see the rapid development of railways, whether in government or private ownership. The importation of the latest Western technology was encouraged, with little resistance from the British, German and American suppliers. Development took place quickly, with Tokyo and Osaka being linked in 1872, the equivalent link in Turkey, between Izmir and Istanbul was only completed in 1912. Domestic manufacture of railway equipment including locomotives and rolling stock was well developed by the time of nationalisation of the majority of railways in 1906.

The extension of government ownership from 30% to 90% of the railway network and the direction to favour private Japanese manufactures over foreign sources for locomotives lead to the rapid development of a bulk building capacity and associated standardisation by the Japanese industry (Ericson, 1998). From 1911, with treaty revisions allowing the re-introduction of domestic tariff protection, and from 1913, Japanese railways were able to source all their standard locomotives from domestic manufacturers.

The modernisation efforts of the new Turkish Republic that inherited meagre infrastructure and an almost non-existent educated workforce from the Empire, were only moderately successful during the course of the twentieth century compared to Japan. As a consequence, contemporary Turkey is still a developing country with abundant social and economic problems ranking eighty-fifth in the Human Development Index (HDI) of the United Nations Development Program (UNDP 2002). There is a similarity with the problems encountered by the Soviet Union which sought parity with the Western powers, but pursued the military and security issues ahead of broader economic development. Although performing better than many comparable Middle-Eastern countries, the Turkish Republic, heir of the Ottoman Empire, now competes with a post-communist Russia that occupies sixtieth place in the HDI.

Meanwhile Japan has become the world's second largest economy, and as a world class production base and a good example of a post-industrial society, Japan ranks ninth. According to the same report Gross Domestic Product per capita for purchasing power parity of the two countries are US$ 6,974 and 26,755 respectively. In the more commonly used Atlas method, the World Bank Gross National Income (GNI) figures for Turkey and Japan in 2001 are US$ 2,540 and 35,990 respectively, placing Turkey in the lower middle income category[3].

These figures clearly demonstrate the gap between two countries which typify the divide between developing and developed world. Other statistics such as education, health, and technology are no different. It is worth investigating some of the underpinning characteristics of development and under-development along with their effect on the viability of IT production and usage. These issues are explored in the next chapter

Notes

1. The Janissaries were an elite military corps recruited from ethnic minorities, often Christian, across the empire. They gradually acquired a powerful role in palace politics.
2. As the leader of all Muslims, it was only the late Ottoman Sultans who attempted to get the support of Muslims around the world when they were struggling to save the Empire from collapsing. Both attempts proved to be futile.
3. See http://www.worldbank.org