1. Introduction and overview

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In 1742, David Hume notes in his essay ‘Of the rise and progress of the arts and sciences’:

That it is impossible for the arts and sciences to arise, at first, among any people unless that people enjoy the blessing of a free government . . . (61) . . .

That nothing is more favourable to the rise of politeness and learning than a number of neighbouring and independent states, connected together by commerce and policy (64).

Where a number of neighbouring states have great intercourse of arts and commerce, their mutual jealousy keeps them from receiving too lightly the law from each other, in matters of taste and of reasoning, and makes them examine every work of art with the greatest care and accuracy (65).

Immanuel Kant, who always took much of his inspiration from David Hume, elaborated on this theory and suggested that freedom itself rests on the existence of a number of neighbouring and independent states, connected by commerce and jealous of each other:

Now the States are already in the present day involved in such close relations with each other that none of them can pause or slacken in its internal civilization without losing power and influence in relation to the rest . . . Civil liberty cannot now be easily assailed without inflicting such damage as will be felt in all trades and industries, and especially in commerce; and this would entail a diminution of the powers of the State in external relations . . . And thus it is that, notwithstanding the intrusion of many a delusion and caprice, the spirit of enlightenment gradually arises as a great good which the human race must derive even from the selfish purposes of aggrandizement on the part of its rulers, if they understand what is for their own advantage (1784/1959: 31).

The idea was taken up by Edward Gibbon (1787)¹ and Max Weber (1923)² and developed into a full-blown theory in two books by Jean Baechler (1975) and Eric Jones (1981). Since then, many eminent historians, social scientists and legal scholars have commented on what might be called the Hume–Kant hypothesis.³ At the same time, controversy continues as to whether competition among neighbouring and independent states favours innovation in the arts and sciences primarily because it provides diversity and facilitates

comparisons (Hume) or rather because it restrains the rulers and promotes civil liberty (Kant). This volume testifies to the liveliness of this debate.

The title of Eric Jones's path-breaking book is *The European Miracle*, thus suggesting that the beneficial effects of interstate competition were largely confined to European history. By contrast, China, India and the Islamic Middle East, which around AD 1500 were at a similar level of development, tend to be regarded as inherently imperial and overcentralized. All of them, it is true, fell behind after 1500. The enlightenment, the scientific breakthrough and the industrial revolution took place in Europe – not in Asia. But China, India and the Islamic Middle East have not always been unified. In their history, there have been long spells of decentralized rule or interstate competition. The same is true for Japan. If the Hume–Kant hypothesis is correct, it should also apply to those periods. It has to be tested against additional evidence. That is the purpose of this book.

The volume contains the papers and comments prepared for an interdisciplinary conference which took place in Heidelberg, Germany, in September 2002. The contributors are historians, sociologists, a socio-psychologist and economists.

While we are primarily interested in the Hume–Kant hypothesis, we also have to allow for competing explanations. If, in some instance, decentralization and interstate competition did not have the predicted effect, how can this be explained? Is the hypothesis conditional on certain other factors which failed to be present? Or was the predicted effect offset by other influences on innovation and growth? We present an overview of the results.

This Introduction is followed by two general chapters – one theoretical and deductive, the other empirical and quantitative. Four case studies ensue.

In Chapter 2, Jean Baechler argues that the most important factor explaining surges of human creativity is a political pattern of fragmentation in which a unified cultural area is divided among a plurality of competing polities. Such a fractal pattern is an organizational structure consisting of multiple levels, each allowed and able to deal with all the problems raised at that level without interference from above or below, and all integrated from level to level so that a problem which cannot be solved at a lower level, can be at a higher level. The fractal pattern optimizes exploration because implementation of innovation requires political freedom, and a plurality of polities is a precondition of political freedom. While the supply of talent is a random variable in society at large, demand for it is larger if no individual or coalition can block new entrants – especially disruptive talents – indefinitely. All histories of political unification are stories of the enlargement of both the polities and political power. By contrast, if political power is fragmented, each ruler needs, in order not to be vanquished, the support of the social elites and has to buy their support by concessions of power, wealth and prestige. The elites obtain from

these concessions the opportunity to build strong coalitions among themselves against the central power. When a limited number of polities have been shaped by chance and by history in such a way that none is strong enough to crush a coalition of all the others, imperialization can be prevented indefinitely.

This was the case in Europe, but the best example of a fractal pattern was the tribal world. China appears to be the perfect model of an empire but it has also experienced two long periods of the fractal pattern. Its predynastic and interdynastic periods have been the most creative and innovative. Japan, having tried during the Nara period to follow the Chinese path to a monopolistic kingdom, failed entirely and began a long journey through the fractal pattern. This evolution culminated in a feudal system which was a perfect example of the highest achievements in innovation and development. In the Middle East, the interdynastic periods are long enough to make empires the exception. But the area becomes divided into mutually exclusive entities, each developing a monopolistic pattern, so that the result is entirely different from what can be observed in Europe.

There are three comments on Baechler's chapter. Michael Cook argues that turning Baechler's insight into a testable hypothesis requires much more specification. Is the fractal or federal pattern a sufficient condition or a necessary condition for cultural creativity, or neither of these? What is to count as cultural creativity? What is to count as a federal pattern? Over what time scale must the effects of interstate competition register?

Mark Elvin in his comment recalls the distinction between stimulus on the one hand and facilitation or inhibition on the other. Without stimulus there is no creativity, but creative response to stimulus requires appropriate conceptual and physical tools as well as physical and organizational resources. The most important single facilitation mechanism for creativity is the intensity per unit of space of interactions between people, that is the exchange of commodities, techniques, ideas, beliefs, fashions and so on. In some respects, empires can be extremely good for creativity because they create a large zone of peace and, at times, free trade. In other respects, the problems of control created by vast political size can lead to the use of techniques that suppress creativity, or creativity of certain types.

Erich Weede suggests that in order to arrive at clearly testable hypotheses, the explanandum should not be cultural creativity but scientific, technological or economic development; the explanans should be defined as political fragmentation rather than a federal pattern; and the side condition is not only a unified cultural area but also a fairly integrated economic area. Political fragmentation is an effective way of dealing with human fallibility because it minimizes the risk of big errors and maximizes the likelihood of detecting and correcting errors. Political fragmentation also forces rulers to recognize private property rights because confiscatory policies would weaken the economy and

reduce tax revenue. The recognition of private property permits economic development, the overcoming of mass poverty and ultimately democracy.

In Chapter 3, Dean Keith Simonton surveys the quantitative evidence on the sources of creativity in different civilizations. Starting from the observation that creative genius is not randomly distributed over the history of any civilization but tends to fall into temporal clusters, he notes several potential causal factors which have been investigated in the literature, finally focusing on political fragmentation and cultural heterogeneity. He recalls the finding of Naroll et al. (1971) that political fragmentation was the only factor significantly associated with the appearance of creative geniuses in the Chinese, Indian, Middle Eastern and European civilizations. The analysis of Schaefer et al. (1977) confirmed that political fragmentation is positively and significantly correlated with the number of creative geniuses in the history of India from 500 BC to AD 1800 ($r = 0.73$). The raw data of Naroll et al. and Schaefer et al. are attached to Simonton's chapter.

In China, however, in the field of literature the correlation between the number of outstanding authors and political fragmentation was strongly negative (Ting 1986). Simonton considers two explanations. First, Chinese literature may have been a special case because all Chinese languages are written in the same way, so that any tendencies of political disintegration could not take voice in a corresponding literary movement. In philosophy, by contrast, the Golden Age occurred when China had disintegrated into numerous independent states. (We shall see that Pak Hung Mo in Chapter 4 offers another reason for considering Chinese literature a special case.) Second, Simonton suggests that cultural heterogeneity may be a more important cause of creativity than political fragmentation (with which it is closely related). He also argues that political fragmentation in China usually did not contribute to cultural heterogeneity because the emergence of new states would represent the conquest of Chinese peoples by invading non-Chinese barbarians. In the civilizations of India or Islam, by contrast, imperial expansion often meant the oppression of cultures quite different from those of the conquerors. Simonton also notes that, according to Armajani (1970), the high point of creativity in the Islamic civilization did not appear until after the disintegration of the caliphate, and that creativity in the history of Japan has been shown to be positively affected by the degree of exposure to foreign influences, that is cultural heterogeneity. But political unification will not be a detriment to creativity where concentrated funds are necessary to finance the achievements, for example, monumental architecture.

In Chapter 4, Pak Hung Mo analyses the varying degrees of inter-jurisdictional competition and their effects on innovation and growth in the history of China. During the Chou dynasty (1122–221 BC), especially from 722 BC onwards, a well-established feudal system generated fierce competition

among a considerable number, at times hundreds, of rulers and forced them to design institutions favourable to economic development and military strength. After the unification of China in 221 BC, political competition was weak. Sometimes, centralized rule was interrupted between the dynasties, for example in AD 222–261 and AD 311–580, but development was hampered by anarchy, barbarian invasion and political instability. The renewal of the unified empires of Sui and T'ang in AD 589 led to counterproductive policies of confiscation and government control and an underutilization of technology. But since bureaucrats were recruited according to their poetic ability, there were remarkable accomplishments in poetry. Under the Sung dynasty (960–1275), which faced severe international competition and had to pay tribute to neighbouring 'barbarians' for most of its reign, China advanced to the threshold of a systematic experimental investigation of nature and created the world's earliest mechanized industry. Private printing was popular, and water-powered machines for spinning hemp thread appeared. The government promoted education, irrigation and trade, including maritime and foreign trade. Military technology was at a high level. The Sung period was both the climax and the end of scientific and technological progress. After the rule of the Mongols from 1276 to 1367, the Chinese Ming dynasty was characterized by the complete centralization of all power in the hands of the emperor and a powerful secret police. It adopted policies of reducing contacts between Chinese and foreigners and of stopping private ventures overseas because this would lead to centrifugal coastal centres of power. As the dominant recruitment subject, the Ming introduced a special type of essay which was rigid in form and elegant in style, but indoctrinating in substance and hostile to innovation in effect. Mo attributes the striking literary and cultural unity of China primarily to the pictorial nature of the Chinese characters, which meant that they could be understood and used by people of very different languages or dialects. In the Appendix, he presents a formal mathematical model to show how interstate competition induces utility-maximizing rulers to adopt more growth-oriented policies even though they risk increasing the power of potential opponents at home by doing so.

In the first comment, Mark Elvin emphasizes that China has also benefited from competition between religions, a highly competitive examination system, the prevalence of a personally free legal status, the trend towards the privatization of land holding and the rise of free markets. Religious competition seems to have been the motive force behind the invention and spread of woodblock printing more than 1000 years ago, with Buddhism in the lead role. The rise of relatively free markets began under a weakened empire in the ninth century, continuing with the political fragmentation of the Five Dynasties and Ten Kingdoms and then again under the Sung dynasty. Elvin broadly agrees with Mo that the Chou and Sung eras were economically highly creative, but

he doubts that interstate competition at the time of the Sung can be legitimately described within a framework of overarching cultural unity. The period of fragmentation after the break-up of the Han empire was much less creative in economic terms; however it was very creative in cultural respects. The Ming and Quing empires also had their innovations but these were of a collective nature: the quality of seawalls was improved with the help of a new technology, and the Quing merchant guilds secured regular trading relationships.

Toby Huff agrees that the Sung period was one of considerable creativity and innovation. There were major changes in land ownership, a state and educational reorganization and, above all, a great upsurge in commercial activity. Some have suggested that the levels of economic output (as measured by tons of iron produced) achieved an all-time high during this period, from which they dropped by 50 per cent during the next three centuries. But some of these institutional changes which lasted all the way to the end of China in 1911 proved to be a fatal block on intellectual progress, civil autonomy and economic development. Most notably, it was the Sung officials who put the civil service examination firmly in place and made the Confucian classics the main subject of study. The examinations were based almost entirely on memorization and discouraged any independent thinking. The system was run by bureaucrats who themselves had mastered the examinations. No independent body of professors could emerge, as the whole system was embedded in the state bureaucracy. Without appropriate institutional foundations, science could not flourish as in Europe.

Erich Weede emphasizes that the political system of imperial China was patrimonial rather than feudal. While feudalism nurtures ideas of reciprocity and rights, including property rights, patrimonialism permits much more arbitrary rule. The ideas of law and of equality under the law never grew roots in imperial China. Moreover, China lacked independent cities which could defend themselves. Weede suggests that China's fast growth since 1979 is to some extent due to devolution and interstate competition. Local and regional governments have to act as if they respected private property rights in order to gain and maintain the favour of investors from inside and outside China.

Finally, the chapter contains several tables which offer quantitative evidence on China. The tables and graphs indicating the number of innovations in the Chinese history of science, which have been extracted from Needham, confirm that innovation was at a very high level in the fourth to second century BC and in the eleventh century AD. Without chemistry, which dominates the total, this was no longer true for the second century BC (Early Han), but the sixth century AD (six dynasties) stands out. The two peaks in the fourteenth and the seventeenth centuries are entirely due to the outliers in the field of mechanical engineering (mainly milling and pumping).

If the number of innovations is computed **not per century but per dynasty**,

and if it is normalized for the duration of each dynasty, the Northern Sung take second rank after the Yuan and before the Earlier Han. Moreover, the number of innovations rises steeply under the Warring States and the Six Dynasties (diverse states 1). The sharpest decline occurs under the Later Han and the Ching.

The results for the Early Han and Yuan may be due to the fact that many innovations had to be assigned to the dynasty in which they were first reported rather than the dynasty during which they were actually made. Moreover, initially, a new empire may still benefit from the innovative thrust of the earlier competitive environment, and the market integration that goes with political unification strengthens the incentive to innovate. But as time goes by, the centralized system degenerates and innovation suffers.⁴

Table 3.1 in the Appendix to Simonton's paper reports the data of Naroll et al. (1971). The number of eminent creators in China is at a peak in the eleventh century when the number of independent states is large. Both numbers drop thereafter. Obviously, these raw data have to be adjusted for population size and the increasing availability of historical data. The quantitative studies quoted in this volume take this problem into account.

The last piece of evidence is in Table 1.1 below. Real GDP per capita in China is estimated to have increased by about one-third between 1000 and 1500. It then stagnated until 1820 while in Western Europe it rose by about 60 per cent. After 1820, Chinese per capita GDP even declined (by 27 per cent until 1950).

In Chapter 5, Günter Distelrath explains how centralizing and decentralizing tendencies alternated in the history of Japan and how these changes affected political stability, legal security and economic prosperity. Before

Table 1.1 Real GDP per capita in selected years (0–1950 AD)*

	0	1000	1500	1600	1700	1820	1870	1913	1950
China	450	450	600	600	600	600	530	552	439
Japan	400	425	500	520	570	669	737	1387	1926
India	450	450	550	550	550	533	533	673	619
Asia excluding Japan	450	450	572	575	571	575	543	640	635
Total Western Europe	450	400	774	894	1024	1232	1974	3473	4594
World	444	435	565	593	615	667	867	1510	2114

Note: *1990 international US dollars.

Source: Angus Maddison (2002: 264).

AD 645, Japan was completely decentralized and divided among a large number of local rulers. In 645, Japan was unified and a strongly centralized system was set up following the Chinese model. Legal security, the currency and the irrigation system benefited, but this order disintegrated when local positions became heritable, landownership spread and tax sovereignties were set up. Towards the end of the Japanese Age of Antiquity, the local power-holders attacked the imperial government as well as each other. In 1185, the position of supreme military commander (shogun) and a system of vassals and retainers were introduced. This feudal structure of the Japanese Middle Ages was very different from the Chinese model and is commonly regarded as an essential step forward, enabling private ownership and the law of contract. But it ended in a century of civil war (1467–1568) which resulted in social and economic collapse. In 1603, the beginning of the Edo period or the Tokugawa shogunate, a new system was established which finely balanced centralizing and decentralizing elements. While the direct rule of the shogun was confined to a limited area, the families of the feudal lords were forced to reside permanently in the national capital (Edo). This hostage system enabled the central government to maintain peace and legal security but at the same time to increasingly delegate administration, including the power to tax. From the mid-eighteenth to the mid-nineteenth century, more than 250 fiscally independent and state-like units (*han*) competed with each other in matters of economic and trade policy, and many had their own (paper) currencies. Less-developed jurisdictions at the periphery could catch up with the most-developed regions or even surpass them by offering good governance and adopting new economic strategies. This ‘proto-interstate competition’ promoted economic prosperity and urbanization. During the Edo period, Japan was isolated from the rest of the world. Its re-emergence as a centralized state in 1867/68 was a reaction to external threats and pressures. However, the Meiji Restoration opened Japan for international political and market competition.

Ken’ichi Tomobe points out that in the Edo period each feudal domain had dominant power not only over the production of local goods and foods, but also over their distribution and circulation. The freedom of economic activity in each domain was basically undisturbed from the eighteenth century onwards. Nor did the central government interfere with local culture, which each domain had developed independently for a long time. While the central government kept Japan united as a nation by centralizing diplomacy and military power, decentralization of economic, social and cultural affairs allowed much progress to occur. Interjurisdictional competition in this period prepared the basis for modern Japanese capitalism in the late nineteenth century.

John Powelson argues that Japan – relative to other countries – has been decentralized from the beginning of history, but because of internal wars and other civil disturbances, decentralization did not lead to significant economic

development until approximately the thirteenth century. Thereafter, lower levels of society – farmers and merchants – formed village organizations that were favourable to freedom, innovation and growth. The most significant push towards these institutions occurred during the Edo period, with the development of modern farming, free merchants, new transportation, financial institutions, insurance companies and other instruments such as forward contracts. All this occurred because the Tokugawa shogunate was too weak to stop it. Japan remained decentralized after the end of the Tokugawa shogunate, but Japan's isolation from the rest of the world during the 1920s and 1930s led to new power for the Japanese army and a recentralization of government. At the end of the Second World War, the army was destroyed, and decentralized Japan was reinvigorated. This was the period when Japan became a world economic power.

Quantitative evidence is provided by Simonton's table on creativity in the history of Japan, and the Table 1.1 on real GDP per capita in this Introduction. The total number of eminent creative individuals began to rise remarkably at the beginning of the Edo Period, with a peak in the middle of the eighteenth century when decentralization reached its highest level. (This is also true for medicine, the only field in the sample that is close to science.) Creativity seems to have increased even more after the Meiji Restoration (1867/68). Real per capita GDP rose by 42 per cent from 1600 to 1870, while it dropped by 6 per cent in the rest of Asia. In Western Europe however it more than doubled in this period.

Chapter 6 is devoted to India. Depak Lal suggests that, in the case of India, political and military competition among states and decentralization did not promote institutions conducive to economic freedom, innovation and growth. He argues that this was due to cosmological beliefs, notably the caste system. The nomadic Indo-European tribes who entered India from the north-west used the prevailing caste system to tie labour down to land when it was scarce relative to land. The caste system enabled them to secure a stable rural labour supply for the relatively labour-intensive plough agriculture. It established a decentralized system of control, and ensured that any attempt to start new settlements outside its framework would be difficult if not impossible. Any oppressed group planning to leave a particular village to set up on its own would find – if it were confined to a single caste group – that it did not have the necessary complementary skills to start a new settlement. Vertical mobility was dependent on the whole caste moving up the social hierarchy by adopting a different occupation, possibly migrating to a new region and demanding a higher ritual status. The other decentralized element of the Hindu socio-political system were the relatively autarchic village communities which had the tradition of paying a certain customary share of the village output as revenue to the current overlord. Like Europe, India was characterized – most

of the time – by political disunity but cultural unity and a disjunction of state and society. One of the few things on which Indian historians agree is that the periods of dynastic imperial rule and political stability – sometimes, though fairly rarely, extending over the whole of the subcontinent – were also the most prosperous and glorious periods of Indian history, and the periods when innovation and growth took place. The basic reason was that the empires provided the subcontinental law and order that allowed long-distance trade to develop.

Dietmar Rothermund in his comment is less inclined to stress cosmological beliefs or the caste system in explaining the impediments to Indian development. He tends to agree with Pomeranz (2000) that the ‘Great Divergence’ between Europe and India originated in the eighteenth century under the oppressive weight of the Mughal empire. Until about 1200, medieval India was probably at least as stable as medieval Europe. Competition among the medieval kingdoms led to cultural innovation in the styles of literature, sculpture, construction of temples and so on. There was considerable interregional trade carried on by guilds of traders. There was also a fairly free international maritime trade. This system was upset when conquerors from Western Asia swept through Northern India and established the Delhi sultanate. The kingpin of this system was the man on horseback, usually a slave. Earlier institutions of local government were wiped out. The Mughal empire did not change this style very much. The massive expenditure on warfare pre-empted development in other spheres. Rothermund objects to the notion of a disjunction of state and society in the Indian context. On the contrary, the Brahmins were agents of state formation and legitimized the king with their rituals.

Erich Weede argues that interstate competition constrains the natural predatory tendencies of the state only where polity and dynastic persistence is the rule. In India, the survival of the political units was much more precarious than in Europe, where many states lasted for centuries even though their frontiers may have shifted. Rational Indian rulers did not have the same incentive to limit their confiscatory inclinations and recognize the property rights of some of their subjects. Moreover, where the mass of the population is excluded from war-fighting, there is little reason for rulers to grant rights, including property rights, to the disarmed population. Since India was ruled by Muslims for centuries, the political system was patrimonial and ‘sultanistic’ (Max Weber). The sultan recruited his staff largely from foreigners and slaves who were extremely dependent upon him, and reliable tools of arbitrary rule. Moreover, polygyny among the ruling Muslim classes meant that reproduction at the top of society was much faster than below, so that the prospects of upward mobility were reduced. This contributed to political instability. The pressure for conformity within the castes hampered the introduction of new working techniques. Finally, the caste system came close to preventing individual mobility so that a wealth-maximizing division of labour became impossible.

As the editors have pointed out, the caste system, by hampering not only vertical but also horizontal mobility, also protected local Indian rulers against interstate competition. The exit option was hardly available to an individual or family, and their local caste found it rather difficult to move to a neighbouring state. By tying down labour to the land, the rulers had restricted interstate competition for labour and human capital. Thus in India political fragmentation did not necessarily entail interstate competition as in Europe.

Quantitative evidence on India is provided in Table 3.2 of Simonton's chapter and Table 1.1 in this Introduction. Table 3.2 is taken from the study of Schaefer et al. (1977) which finds a very high correlation between creativity and political fragmentation in the history of India. The number of eminent creative persons peaks in the fourth and the twelfth century, the competitive medieval period discussed by Rothermund. The table also reveals that the twelfth century had the largest number of independent states (56). Table 1.1 shows a 22 per cent increase of real GDP per capita between AD 1000 and 1500, stagnation until 1700 and decline thereafter (until 1820).

The last chapter deals with the Islamic civilization in the Middle East and the Mediterranean. Timur Kuran, in his extensive chapter, argues that there is no systematic relationship between the degree of Islamic political unity and the Middle East's economic success. Its political centralization varied over time in ways that correlate poorly with the observed institutional creativity. The Ottoman state was highly centralized during the period considered its Golden Age. But all versions of the 'absolutist Islamic state' make the mistake of projecting state control in the modern sense to distant periods when social control techniques were still primitive. The critical difference between Europe and the Islamic world was not that one of these civilizations was more fragmented than the other in a political sense, but that laws critical to organizational development were relatively less flexible, and therefore more homogeneous, in the Islamic world. Greater homogeneity implied less institutional experimentation and fewer opportunities for starting down the path to modern capitalism. Islamic states allowed legal pluralism only to the non-Muslim minorities. Two elements of Islamic law, in particular, hindered the emergence of social pressures capable of inducing changes from within: the inheritance system, which kept commercial enterprises small and ephemeral, and the individualization of Islamic law, which precluded corporations. They also weakened the merchant class and limited the growth of civil society, thus restraining the demand for legal reforms. Moreover, Islamic states harmed economic growth through predatory policies inimical to private wealth accumulation. Thus the economically productive class gradually lost political influence to the state bureaucracy.

There are six comments to this chapter. Peter Bernholz draws attention to the beneficial consequences of political and ideological competition in

Muslim Spain. With the decline and fall of the Umayyad dynasty (756–1031), many small kingdoms (*ta'ifas*) developed in Islamic Spain. The dispersion of political power did not mean the end, but a greater extension, of cultural life: Seville, Granada, Valencia and other cities became political and cultural centres besides the old Cordoba. Indeed, the Spanish–Islamic culture gained real independence and discovered itself during the eleventh century. The sciences and medicine also flourished during this period. When the King of Castile conquered Toledo in 1085, the princes of Seville, Granada and so on felt threatened and asked the Almoravids (Morocco) for help. This help was granted but the Almoravids used the opportunity to subjugate all Spanish Muslim kingdoms except Valencia. The Almoravids (1086–1144) – after another, very short period of competing small kingdoms – were followed by the Almohads (1155–1212). Both the Almoravids and the Almohads were religious fundamentalists and quite intolerant, but they had to compete for citizens and human capital with the Christian rulers of Spain. After the decline of Almohad rule, the kingdom of Granada remained as the last Muslim state on the Iberian peninsula. It was able to maintain a highly developed culture, of which the Alhambra still bears evidence. Thus the zenith of Arab civilization on the peninsula, and perhaps of Arab–Islamic culture in general, occurred at a time of political decline when the rule of small states was self-evident. Bernholz also shows that Muslim Spain flourished economically. But it seems impossible to distinguish economic performance in these sub-periods as most of them were fairly short.

Michael Cook gives a picture significantly different from Kuran's. He argues that Islamic history provides quite a varied terrain on which to try out the Hume–Kant hypothesis. He distinguishes four periods:

- (A) a unitary period (from the time of the Prophet down to the later ninth century)
- (B) a plural period (from the later ninth to the early sixteenth century)
- (C) another unitary period (the Ottoman empire of the sixteenth century)
- (D) a crypto-plural period (the Ottoman empire of the seventeenth and eighteenth centuries).

Cook argues that the hypothesis is in trouble in period (A), which was one of remarkable cultural creativity. But Islamic law developed outside the context of state patronage, in places far from the political centre. In such a case it may be irrelevant whether there is one state or many. The disunity of period (B) did not deliver a good economic performance but produced some kinds of cultural creativity, for example the re-emergence of Persian as a literary language. Political instability may have been a problem. The hypothesis performs fairly well in the high Ottoman period (C): the absence of interjurisdictional

competition dampened pressures for raising the sophistication and efficiency of the law. The late Ottoman period (D) of formal unity and effective disunity was definitely not one of vibrant and sustained economic growth. Once more, political instability may have been the explanation.

In Mark Elvin's view, Islam as a cultural phenomenon must not be considered a historical constant. Initially, the process of Islamic jurisprudence was quite responsive to the needs of key economic players. The early Islamic polities – the Umayyad and Abbasid caliphs, for example, were much more open to change than their successors. Gradually, this flexibility was lost. Elvin questions the decisiveness of the Islamic laws of inheritance which made it hard to accumulate enduring concentrations of wealth in private hands. Other great pre-modern societies, including China, also had laws or conventions of partible inheritance. The example of China also shows that the predominance of the state bureaucracy does not explain why the Ottoman rulers were absolutely indifferent to fostering the economic well-being of their subjects in a proactive fashion. For the Chinese empire, the people's livelihood was a well-understood Confucian responsibility.

Toby Huff agrees with Kuran that Islamic law blocked the way to continuous economic development. Although after the demise of the Abbasid empire the Islamic lands were divided up into potentially competitive rivals, the institutional structure that was derived from Islamic law negated the creative potential of the rivalrous context. Even the Ottoman empire fell far short of including all the major Islamic lands: there were three additional great Muslim empires (the Safavid centred in Iran, the Uzbek or Timurid, and the Mughal empire) – not to mention the Mamluk empire (Cairo), the Malaccan sultanate (Morocco), the Maghreb and the Songhay empire (Timbuktu). Even the competition with Europe did not result in enhanced economic development for the Ottomans. The break-up of the cultural and political unity of the Abbasid empire had not brought about a flowering of scientific creativity either. Instead, from the thirteenth century onwards, scientific culture in the Islamic lands continued to deteriorate. Most of the major philosophers and scientists required royal patronage, and when they lost it, suffered at the hands of local religious opposition groups. A major impediment to the development of modern science in the Muslim world has been the lack of legal autonomy, as enjoyed by European universities, cities, professional guilds and corporations.

Stephen Humphreys suggests that the most useful way of thinking about the relationship between politics, economics and cultural dynamism is to assess the capacity of a given regime to assure order and stability without becoming predatory. The causal direction however is often far from clear: should we ascribe the grandeur of ninth-century Baghdad or sixteenth-century Istanbul to the power of the Abbasid and Ottoman states, or should we say that these states owed their grandeur to economic vitality which was quite independent

of them? What is certain is that large states which spent themselves into fiscal crisis (as the Abbasids did) or which spun into fiscal crisis for reasons beyond their control (as with the Ottomans at the turn of the seventeenth century) rapidly became predatory regimes, with disastrous economic (though not always cultural) results. As for the detrimental effects of Islamic commercial law, Kuran's argument is weakened by the barely adolescent state of our knowledge about the concrete historical development of Islamic legal doctrine over the centuries, and about the internal trade of the Ottoman empire.

Erich Weede identifies three reasons for the legal stagnation in Muslim civilization. First, legal competition was too weak, and obviously one background condition for legal competition and evolution is political fragmentation. Second, the common roots of Muslim law in the *Shari'a* further mitigated legal competition. And third, legal stagnation followed from the traditionalism inescapably linked to the ideas of God as law-giver, the Prophet as the mouth-piece of God, and the closing of the gates of interpretation at about 1000. Political fragmentation could not lead to the usual results because the revealed divine law represented the unchanging will of God. However, Weede insists that kleptocracy was a more fundamental problem than the Islamic law. The insecurity of property rights under sultanism discouraged capital formation by the merchants and market augmentation.

The editors would like to add that in most cases Islamic law seems to have prevented the Islamic states from competing effectively with regard to property rights. Large parts of Islamic law were binding in all Islamic states – even at the time of political disunity. As in the case of India, political fragmentation was not a sufficient condition for political competition because religious rules suppressed such competition.

Quantitative empirical evidence is provided by Table 3.1 attached to Simonton's chapter. The data of Naroll et al. (1971) reveal that in the Middle East, both the number of eminent creators and the number of states peaked in the tenth century.

The editors draw the following conclusions from these chapters and comments:

1. Political fragmentation is not a sufficient condition for political competition, innovation and growth but it is a necessary condition for interstate competition and for a high probability of sustained innovation and growth, at least in the private sector.
2. Political fragmentation will not lead to interstate competition unless there is considerable mobility among jurisdictions. This may have been lacking in India because of the caste system, and to some extent in the Islamic Middle East.
3. Political fragmentation will not lead to interstate competition if the rules

- of a common religion effectively prevent the states from competing, for example in the field of property rights, as under Islam.
4. Interstate competition will not bring about widespread and sustained innovation and growth unless there is a minimum of political stability. The rulers must be sufficiently confident to keep their jurisdiction (as a sort of property) for themselves and their heirs. The survival of government, both at the top and the provincial level, may have been too precarious in India and the Islamic Middle East.
 5. Political fragmentation will not favour innovation and growth if it leads to prolonged and highly destructive wars rather than limited warfare or peaceful competition for manpower and capital. Initially, empires may raise economic growth because they stop such destructive wars, establish law and order and liberalize trade and capital movements. After some time however they introduce excessive taxes and regulations which stifle innovation, efficiency and growth. Alternatively, incessant warfare can be prevented by geographic barriers, cultural unity or some balance of power.
 6. The innovative spirit generated by interstate competition may persist in the early stages of a new empire, but sooner or later it dies away.
 7. Political fragmentation stimulates innovation and growth not only by promoting political competition and freedom but also by increasing diversity and the scope for comparison.
 8. Quite apart from political fragmentation, innovation and growth also benefit from institutional pluralism within the political units. It matters whether there are competing legal instruments, as in European history but not under Islam, and whether religious institutions are sufficiently separated from the state, as in European and Japanese history.

NOTES

1. 'Europe is now divided into twelve powerful, though unequal kingdoms, three respectable commonwealths, and a variety of smaller, though independent states . . . The abuses of tyranny are restrained by the mutual influence of fear and shame, . . . monarchies have imbibed the principles of freedom, or at least of moderation' (Gibbon 1787, Vol. VI, Chapter 38: 328).
2. 'The competitive struggle (among the European nation states) created the largest opportunities for modern western capitalism. The separate states had to compete for mobile capital, which dictated to them the conditions under which it would assist them to power' (Weber 1923: 249). Note that, to some extent this was anticipated by Hume's friend Adam Smith (1776): 'The proprietor of stock is properly a citizen of the world, and is not necessarily attached to any particular country. He would be apt to abandon the country in which he is exposed to vexatious inquisition, in order to be assessed a burdensome tax, and would remove his stock to some country where he could, either carry on his business, or enjoy his fortune at ease. A tax that tended to drive away stock from a particular country would so far tend to dry up every source of revenue, both to the sovereign and to the society' (Vol. 2: 375 ff.). And he adds: 'The abuses which sometimes creep into the local and provincial administration of a

- local and provincial revenue, how enormous so ever they may appear, are in reality, however, almost always very trifling in comparison with those which commonly take place in the administration and expenditure of revenue of a great empire. They are, besides, much more easily corrected' (Vol. 2: 253).
3. It has been supported by Brennan and Buchanan (1980: 180–86), North (1981: 23ff.; 1998), McNeill (1982: 114), Berman (1983: 553; 1998), Hall (1985: 102; 1988), Chirot (1986: 296), Rosenberg and Birdzell (1996: 136ff.), Kennedy (1987: 16–30), Engerman (1988: 14ff.), Weede (1988, 2000), Pipes (1999) and Mokyr (1990: 302). See also Baechler (1988).
 4. However, the hypothesis has been criticized by Goldstone (1987) and Pommeranz (2000).
 4. In Simonton's correlation analysis of Western civilization (1975), political fragmentation has its strongest effect on creativity with a lag of 20 years.

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