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Why Europe?

On comparative long-term growth

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Abstract

Four historical macro phenomena of development ask for an explanation: the slow increase of welfare in Western Europe from the Middle Ages up to the publication of the *Wealth of Nations*, rapid modern economic growth in Europe and its transoceanic ofshoots following the industrial revolution, the lagging behind of the Asiatic areas India, China, and Japan, and the succession of economic leadership from Italy via the Low Countries and the United Kingdom to the US. The paper deals with these problems on three levels. On the first level of proper economic analysis the process of material growth is approached. On a second level, the level of institutional economics, the social framework is introduced. The third level is the field of the political economy of institutional change. Classical and neo-classical economic theory and institutional political economy offer a number of plausible explanatory causes. Next to the classical division of labour and accumulation, technical progress and human capital play a decisive role. It is shown that the emergence of an impartially operating system of law and a polity which supports it make possible the unfolding of such material conditions for growth. The institutional factors, in turn, are furthered by the development of autonomous and self-responsible individuals and competition between them and between independent political systems. Finally, a general attitude favouring the search for new ideas together with a positive attitude towards progress and risk contribute to the great divergence.

JEL Classification: N1, O1, P1

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1. Introduction

In the second half of the 20th century the world was divided into three parts. The First World comprised industrialised Western Europe with its transatlantic offshoots in North America, Australia, and New Zealand with the later addition of Japan. The Second World was communist and tried to catch up with the West with dubitable success. And the remainder, the Third World, was less developed and remained poor enjoying only a tiny fraction of the Western standard of living. In East Asia the Second and the Third World overlapped.

It is rather astonishing how long the economics profession remained unconcerned about this state of affairs.[3] After all, all societies started their development from more or less the same (subsistence) level: How did such an extreme divergence become possible? And what was to be done to close the huge gap? Since the 1950s, since Nurkse, Prebisch, Hirschman, Myrdal, the economics of development saw great advances. It concentrated its efforts, quite understandably, on economic policy to find suitable strategies of development (Thorbecke 2006). Only quite recently the historical problem came to the fore: how was Europe able to raise its wealth so high above

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[3] Not so surprising on closer inspection: "The economic and social development of the Third World, as such, was clearly not a policy objective of the colonial rulers before the Second World War" (Thorbecke 2006:1).

subsistence and why did other advanced civilisations like China and India stay behind, starting to catch up only recently?

These questions will be dealt with in this paper. The answer, evidently, will have to start from the analysis of the historical perspective of economic growth. Growth theory identifies relevant phenomena like division of labour, trade, structural change, population growth, accumulation, and innovation that are believed to be linked causally to welfare growth. However, it is exactly these phenomena that we mean when speaking of growth and development. They are the outward appearance of economic growth. So we have to ask what gets these phenomena moving. The answer seems trivial: the decisions of economic agents. But they are not taken in a vacuum: they are embedded in a social, cultural, and institutional framework. Things get complex, and to identify the major moving forces in this dynamic system is the task of theory.[4]

On a first level of proper economic analysis we deal with the process of material growth. On a second level, the level of institutional economics, the social framework is introduced that supports or hinders decision making with respect to growth. The influence of institutions on economic development has been proved in numerous studies (see Acemoglu, Johnson, Robinson 2005a). It is typical of most of these that they do not take long-term growth but rather short-term growth or cross-section welfare differences as *explananda*. One of the reasons is the data that rarely allow for a different approach. Our question, however, is about the long run. Hence we will have to cope with quite a precarious data situation. The long-run approach allows, on the other hand, to ask what determines the historical pattern development of institutions, since many of those are the result of processes reaching far into the past. This third level is the field of the political economy of institutional change. These three levels will have to be dealt with in some more detail.

There is still a fourth level of analysis that will be repeatedly referred to, but will not systematically be treated. For we know even less about it than about the factors on the second and third levels. What is meant is the level of attitudes, mental models, and cultural conditioning. Such phenomena are not only long-term in character, but may also have a rather short-term impact like economic knowledge. Take, for example, the mentioned economics of development. In the 1950s and 1969s it was the accepted knowledge that public development planning, import substitution, the construction of heavy industry will accelerate the process of catching-up. Such was the state of the art at the time. In the 1970s and 1980s the mainstream changed its mind: the market moved to centre stage and with it comparative cost. The resulting economic policies could not be more different (see Thorbecke 2006; Lin 2007). In short, the minds of economic subjects are moulded by quite different models which thus influence directly decision making and its success.

The paper is structured quite simply, following this three level scheme. Under the heading "theory of growth and development" divergence and convergence of

[4] I do not believe, however, that answering the question in the title we will succeed in fullfilling Lucas' ideal:

> *I prefer to use the term 'theory' in a very narrow sense, to refer to an explicit dynamic system, something that can be put on a computer and run. This is what I mean by the 'mechanics' of economic development - the construction of a mechanical, artificial world, populated by the interacting robots that economics typically studies, that is capable of exhibiting behavior the gross features of which resemble those of the actual world (Lucas 1988: 5).*

Rather will we be content to identify relevant factors which allow to construct a descriptive theoretical frame. History will provide the facts.

welfare will be discussed from the point of view of material growth, from the institutional angle, and from the perspective of the factors influencing policy change. It makes sense to separate classical and neo-classical theories although both face similar phenomena. We will try to separate clearly the three levels of material economic, institutional, and political-economic analysis. Classical growth theory has done so less explicitly than neo-classical theory which sticks mainly to the first level. The result of the discussion will allow us to broach the question in the title: why Europe? To start with, however, it is necessary to clarify the facts. Even if exact quantification of differences in development is troubled by methodological obstacles, we may speak of stylised facts as far as the present time and recent past is concerned. The more we have to go back in time (and our question will lead us there), the more opaque the data will be and the less consensus can be expected regarding the facts. These will no longer be stylised facts, but rather stylised conjectures.

2. Stylised facts or stylised conjectures

Economic welfare is usually measured by aggregate output data – the productivity of a society or GDP per capita. Although serious objections have been aired, we will stick to the convention. Comparing aggregate output data that have been corrected for differences in purchasing power does not lead to an unequivocal result. For we are comparing incommensurable magnitudes. The aggregate consists of mostly heterogeneous elements, and the price vector by which they are valued will be structured differently from country to country. The greater the differences in consumer habits, culture, and development, the greater will be potential discrepancies resulting from the index number problem and heterogeneity of preferences and goods.[5] In addition there are the usual data problems connected with determining representative baskets of commodities and representative prices. How significant the differences can be when comparing the most recent and, hence, probably most reliable data is shown by the following table.

Table 1 - GDP per capita at PPP in a uniform currency

Country	Maddison 2003		ICP 2005	
	International $ of 1990	USA = 100	US $ of 2005	USA = 100
USA	29 037	100.0	41 674	100.0
China	4 803	16.5	4 091	9.8
India	2 160	7.4	2 126	5.1
Japan	21 218	73.1	30 290	72.7
Germany	19 144	65.9	30 496	73.2
France	21 861	75.3	29 644	71.1
Italy	19 151	66.0	27 750	66.6
UK	21 310	73.4	31 580	75.8
Spain	17 021	58.6	27 270	65.4

Sources: Maddison (2007: 382); ICP (2007)

[5] This is not the place to treat the microfoundation of comparing macro data and index number theory. See, for instance, Caves, Christensen, Diewert (1982) und Diewert (1999).

The same is true, *mutatis mutandis*, for intertemporal comparisons. Real growth rates of aggregates are fictitious relations of incommensurable magnitudes. That does not prevent economists from working daily with such data. Carefully computed, i.e. with representative commodity baskets and prices, the possible bias can be neglected for short time spans. Intertemporal comparisons will become a serious problem when we do not compare two consecutive years but two consecutive centuries or even more distant periods. Does it make sense to speak of a GDP of the Roman Empire at the time of Augustus measured in international Dollars of 1990[6]? It sounds absurd. But nevertheless, suppose we would have the data and would compute back to the year 0 the annual rate of growth we should get a meaningful figure. In each of the 2000 years or so production in a given region either grew or declined or remained unchanged. Chained over the whole period, adapting the commodity basket appropriately, we arrive at a representation of long-term development.

Of course, we do not have the data. National accounting is rather young of age. Some reliable production and price statistics may exist back into the middle of the 19th century. What happened further back has to be guessed from isolated information and will be subject to serious margins of error. Even if *Table 1* is not unequivocal, even if the rank ordering of countries is not the same according to the two sources, it contains some clear information: among the nine countries economic productivity is highest in the USA, Western Europe and Japan attain two thirds to three quarters of this level, and India and China fall far behind. This is the present situation about which there can be little doubt. What will occupy us now is the pre-history of this situation: has it always been so, or can we identify periods of divergence and periods of convergence?

In order to answer the question we need long time series. But how long do they have to be, how far back into history do we have to go? That depends upon our preliminary historical insight. There are two extreme views: that of the so-called Californian school (Jones 2003: 249), holds that prior to the industrial revolution, i.e. prior to the middle of the 18th century, differences in development between Europe and South and East Asia can be neglected (e.g. Pomeranz 2000). The other view sees long-term economic growth starting in Europe in the Middle Ages, at the beginning hardly discernible, while all other regions showed no long-term upward movement (see, e.g., Jones 2003 and Maddison 2007). They remained in a Malthusian situation in which a temporary improvement of welfare got thwarted by a consecutive population growth. This difference of views makes it necessary to have data for about one thousand years.

Such data are provided by Maddison (2001, 2003, 2007). The closer the data are to the present day, the more reliable is their statistical basis. To convert them into comparable magnitudes is subject to the mentioned problems. The farther back in history the data go, the more they rely on estimates and the more they can be doubted. This paper assumes the data conveyed by Maddison to be plausible which will, of course, have consequences for the answer to our guiding question "why Europe?".

[6] International Dollars result from a method developed by Geary (1958) and Khamis (1972) to calculate purchasing power parities for multilateral income comparisons. They avoid the bias arising from taking the prices of one country as basis for comparison.

Table 2 - GDP per capita 1000 – 2003, in international Dollars of 1990

Year	Western Europe	USA	Japan	China	India
1000	427	400	425	450	450
1500	771	400	500	600	550
1700	997	527	570	600	550
1820	1 202	1 257	669	600	533
1870	1 960	2 445	737	530	533
1913	3 457	5 301	1 387	552	673
1950	4 578	9 561	1 921	448	619
1973	11 417	16 689	11 434	838	853
2003	19 912	29 037	21 218	4 803	2 160

Source: Maddison 2007: 382

The table allows to identify important stylised facts, or conjectures, for the period prior to 1820:

During the first 500 years (1000 – 1500) Western Europe[7] exhibits an average growth rate of 0.12, China 0.06, India 0.04 and Japan 0.03 percent.

During the following 320 years (1500 – 1820) the growth rate increased only insignificantly in Western Europe, while the development in North America caught up with the European level. In China and India growth stagnated and Japanese growth increased slightly to 0.09 per cent.

When modern economic growth started, i.e. about 1820, the lead of the West with respect to China and India increased to 100 – 125 per cent.

After 1820 we are on safer ground:

In Europe and its North-American offshoots development speeded up till 1973, although the second 30 years war (1914-1945) led to a deep recession on the old continent.

In 1870 Japan takes up her successful process of catching-up, also interrupted by a war period, yet only that of World War II.

Development in China was rather retrogressive. Only after World War II substantial growth set in and soared impressively after 1976.

India experienced between 1870 and 1913 a modest phase of growth. For the rest it shows a similar picture to China's, except that the rates of growth are considerably lower.

Growth in the millennium may be divided into two phases

so-called "Smithian growth" (Mokyr 2005) which, if at all positive, was extremely slow and volatile with deep depressions and which was based mainly on commercial development,

modern economic growth which was ten times the amount and has to be seen basically as technological growth. It got started in Western Europe and its North-American offshoots at about 1820.

[7] The data of Maddison are computed for regions within their present day borders. This is relevant only for the most recent period, since the conjectures for the time before make exact demarcations less important. Finland, Germany, Austria, and Italy define the Eastern borders of Western Europe. After partition of 1947 India is limited to the Republic of India. For the prior period it is the whole subcontinent.

We have to face briefly the question, whether or not this representation is plausible. Two troublesome problems have to be clearly separated: did "Smithian growth" [8] really take place between the high Middle Ages and the industrial revolution, and were the non-European centres of civilisation really significantly behind at the start of modern economic growth? The first question has already been treated extensively by Adam Smith (1776/1976) in the third book of his *Wealth of Nations*. There is quite a lot of circumstantial evidence for a real process of development (see, for instance, North and Thomas 1973; Jones 2003, Mokyr 2005, Greif 2006). The second question is much more intriguing. If we would again call Smith into the stand, the answer would be ambivalent. On the one hand he said: "China is a much richer country than any part of Europe" (Smith 1776/1976: 208). On the other hand he thinks that real wages in China are significantly lower than in Europe (*ibid.*: 224), and "the poverty of the lower ranks of people in China far surpasses that of the most beggarly nations in Europe" (*ibid.*: 89). His remark that China had reached her peak long before the time of Marco Polo (1254-1324), yet "it seems however to have been long stationary" (*ibid.*) is well in accord with the data of Maddison. This peak has surpassed probably by a considerable amount the concurrent European level.[9] It was above all the catastrophe of the Mongol invasion that put an end to this bloom (which, by the way, is also true of the Islamic world).

Clark (2001; 2005) has made accessible a sizeable new body of data for England for the period 1200 – 2000. He concludes that the subperiod 1200 – 1640 was characterised by a Malthusian situation, i.e. long-term real growth was minuscule and fluctuations of welfare were caused above all by fluctuations of the size of population. This period is composed of two parts: between 1200 and 1500 real income in England increased, and between 1500 and 1640 it fell, mainly because of high rates of inflation. After 1640 a slow, after 1860 a rapid steady growth set in. This seems to contradict Maddison's data and the assumption of a "Smithian growth" since 1200. However, Clark (2001: 41-2) computes for the years around 1600 a GDP per capita in England which is about 90 per cent of the Indian per capita income in 1992. Taking into account that Indian per capita income grew by about 150 per cent between 1600 and 1992 (Maddison 2007: 382; 2003: 184) it follows that also Clark assumes implicitly higher incomes in Europe before the industrial revolution. When this divergence did take place, he does not tell.

The notorious fabulous riches of the Orient blinded the Europeans at all times. The courts of the Sultan at Istanbul, the Shah at Isphahan, the Great Mughal at Delhi, the Emperor of China at Peking were harbours of legendary treasures, incredible luxuries, centres of highly developed arts and crafts. In addition China produced in the Song period (960 – 1279), the early peak of her social and economic development, technical innovations which were reproduced in Europe only centuries later. What Needham (1970: 414) has called "the three Baconian inventions" (compass, gun powder, and printing) are only specimens of a long list of astonishing technical and

[8] It has been named so, because Adam Smith not only described such growth, but because he also identified the extent of markets and the concommitant division of labour, positive returns to scale in modern parlance, as major causes of such growth.

[9] "The surprise of a Marco Polo at the end of the 13th century was not feigned: the distance between East Asia and the Christian West was striking. Just comparing the world of China and the Western world of the epoch in each single field – exchange of goods, technological level, political organisation, science, the arts and the humanities – would lead to the conviction that Europe lay far behind. During the 11th – 13th centuries China and the Islamic countries were incontestably the two most important civilisations" (Gernet 1972/1997: 297).

scientific developments that in the end, however, did not lead to sustained economic growth.

We have to modify this proposition, since stagnation befell only per capita income while China saw a considerable growth of population in the course of the centuries. Therefore production grew with the population and the Malthusian limit was pushed outward by technological progress together with territorial expansion into the South. The high volatility of population development in China testifies to a rather precarious economic basis and to the impact of forces described by Malthus. While Europe had learned after the Black Death of the 14th century, which had hit both areas, to master such epidemics, China saw further dramatic falls in population in the 17th and 19th centuries

Table 3 - Population 1000 – 2003, in Millions.

Year	China	Western Europe	India
1000	59.0	25.4	75.0
1300	100.0	58.4	
1400	72.0	41.5	
1500	103.0	57.3	110.0
1600	160.0	73.8	135.0
1700	138.0	81.5	165.0
1820	381.0	133.0	209.0
1870	358.0	187.5	253.0
1913	437.1	261.0	303.0
1950	546.8	304.9	359.0 [a)]
1973	881.9	358.8	580.0
2003	1 288.4	394.6	1 049.7

a) 1950 and after only Republic of India
Sources: Maddison 2003: 249; Maddison 2007: 376.

Another example of Chinese dynamics is often seen in the naval expeditions of the Ming period (1368 – 1644). Between 1405 and 1433 Zheng He, a Muslim eunuch, led a huge fleet in seven voyages to India, the Persian Gulf, and the East coast of Africa among others (Needham 1970: 50-6). This so-called treasure fleet numbered some 50 – 100 vessels and a crew up to 30 000 men, incredible by the standard of the time. Columbus' second and best equipped voyage (1493-4) consisted of 17 ships and a crew of 1 200 men. However, the European naval expeditions that started only a little later than the Chinese soon led to the construction of forts and trade entrepots, to stable and profitable trade relations that often had a military backing, in short to an initially private colonialism. Zheng He also sailed with military support, but this mainly to claim respect for the Emperor of China and to bring exotica to the Peking court, not to make possible economic enterprise. After this short period China was closed – though not as tightly as Tokugawa Japan. The ships of the treasure fleet were taken out of service. Further long distance expeditions did not take place.

Pomeranz (2000), the representative of the Californian school, tries to prove that Europe and Asia were more or less on the same level of development around 1750 in their growth centres, the Yangtze delta and England and the Netherlands. And they were faced with the same problem "that the production of food, fibre, fuel, and building

supplies all competed for increasingly scarce land" (ibid: 207).[10] Both would have suffered from the same fate of stagnation, had Europe not found by luck and by its political power a successful exit: "coal and colonies" (ibid: 68). This argument has several weaknesses (see also Maddison 2003: 246-54) which we cannot discuss here in detail. Above all Pomeranz fails to see that the Flemish and Dutch period of growth starts about 300 years before the English and that implies without coal and colonies. Medieval growth in Northern Italy is not mentioned at all. On the other hand, he is at pains to explain why China neglected coal as fuel although she disposes of accessible deposits and possibilities of extraction and use were discovered very early in the Song period. To what extent the English colonies in the West Indies and North America significantly broke up resource constraints at the beginning of the industrial revolution – Pomeranz stresses sugar and cotton – remains questionable. The Dutch colonies did not have such an effect. They procured what they needed preferentially from the Baltic area and from the sea (herring). Neither did Spain and Portugal use "ghost acreage" to an appreciable extent, despite the empty space in Latin America.

The Californian school, but also Acemoglu, Johnson and Robinson (2001, 2005a)[11] and Lin (2007) consider the distribution of wealth more or less equal all over the world around 1750. According to them colonialism is the cause for Europe being able to jump-start modern economic growth and for China and India to fall behind. Their critics stress long-term development in Europe, urbanisation, prospering fairs, foundation of universities, the Galileo-Baconian turn in science, the systematic propagation of knowledge, cross-border commercial and scientific communication, competition, the impact of enlightenment: "Nothing of the sort ... can be detected in the Ottoman Empire, India, Africa or China" (Mokyr 2005: 1135) and hence "Europe was already ahead" (ibid.: 1172). The argument entails the danger of interpreting a European pattern of development, i.e. the co-evolution of numerous cognitive, social, and institutional phenomena and the simultaneous welfare growth, in a normative way and to exclude other possible roads to Rome.

Whether or not the Asian empires were at par with Europe in the early 18th century, and this not only in certain oases of development like the imperial centres and the Yangtze delta, or whether Europe was leading already at that time, will occupy the profession for some time. For the available data are precarious. If we consider the conjecture of Smithian growth plausible, i.e. growth of about 133 per cent between the year 1000 and 1700, it will be necessary to show for the Californian hypothesis that either the starting level has been considerably higher in China than in Europe, or that a similar Smithian growth took place in the East and not the moderate 33 per cent indicated in Table 2. To show the same for India should be even more difficult. We assume as stylised conjecture that Europe experienced a slow growth of per capita income since the Middle Ages, i.e. an economic growth slightly above the growth of population. After the industrial revolution this growth accelerated considerably. In the beginning China lay above the European level, but remained more or less stagnant over

[10] This was also what Ricardo had expected at the time when modern economic growth set in. Pomeranz does not mention Ricardo.

[11] Acemoglu, Johnson and Robinson (2005a: 407) hold that about 1500 Mughal India and the Inca and Aztec societies had the highest welfare level the world. They show no proofs, and the evidence does not support them. Or why could a few thousand Englishmen conquer India shortly afterwards. Do we believe that a civilisation that did not use the wheel, did not domesticate animals and, hence, did not have horses, even no bullocks, has raised its standard of living far above subsistence level?

the centuries fuelling all economic growth into population growth. At what date exactly Europe took in China, whether in 15th or in the 18th century, seems to be of slight importance. What has to be explained is the difference between growth and stagnation and for that it is of utmost importance whether European development set in in the 11th or in the 18th century. Those assuming the latter (as Pomeranz 2000; Acemoglu, Johnson, Robinson, 2001; Acemoglu 2009) will put other factors centre stage than North and Thomas (1973) and Greif (2006) who favour the former date.

Up to now Western Europe was treated in its entirety. This is warranted, since all European countries experienced more or less the same development. On closer inspection, however, we see alternating phases of divergence and convergence. Individual countries exhibit growth pushes, while the rest catches up shortly afterwards. The leading position – the leader at any point of time is highlighted – moves over the centuries from South to North and finally crosses the Atlantic.

Table 4 - Per capita GDP in Western Europe 1000 – 2003 in international Dollars of 1990 and in per cent

Country	**1000**	**1500**	**1600**	**1700**	**1820**	**1870**	**1913**	**1950**	**1973**	**2003**
Western Europe	427	771	850	997	1 202	1 960	3 457	4 578	11 417	19 912
Western Europe	100	100	100	100	100	100	100	100	100	100
Italy	105	143	129	110	93	76	74	76	93	96
Netherlands	100	99	162	214	153	141	117	131	115	108
U.K.	94	93	115	125	142	163	142	152	105	107
France	100	94	99	91	94	96	101	115	115	110
Germany	96	89	93	91	90	94	106	85	105	96
Spain	105	86	100	86	84	62	59	48	67	85
USA	94	52	47	53	105	125	153	209	146	146

Source: Maddison 2007: 382.

The data are subject to the same qualifications discussed above. Whether the Netherlands were still ahead of the UK in 1820 or the USA took the lead as early as 1913 does not really matter. Again we are interested in stylized facts or conjectures:

- At the turn of the first millennium all Europe was more or less on subsistence level without major differences. Italy and Spain may still have kept an edge as a legacy of ancient Roman or more recent Islamic times.

- In the second half of the Middle Ages Italy, more exactly the Northern and Central Italian cities, saw a considerable economic upswing, significantly above the level of the rest of Europe.
- In the course of the 16th century the lead was taken over by the Netherlands, first by the Flemish cities, later by the Northern provinces.
- At the beginning of the 19th century the industrial revolution and its accelerated growth brought the leading position to the UK, which kept it for about a century.
- Finally, at the beginning of the 20th century, the USA became the most developed country. Catching-up has ever since meant catching-up with the USA.
- By the turn of the third millennium Western Europe has largely converged to a comparatively high level of welfare, not far from that of the US.

This gives us four macro phenomena of development that beg for elucidation:

- the slow increase of welfare in Western Europe from the Middle Ages up to the publication of the *Wealth of Nations* (1776),
- rapid modern economic growth in Europe and its transoceanic offshoots following the industrial revolution,
- the lagging behind of the Asiatic areas India, China, and Japan and their catching-up process,
- the succession of economic leadership or *pôles de croissance* during the last millennium.

3. Theories of growth and development

At all times economics has tried one way or other to explain these phenomena. We cannot review the relevant literature – whole libraries are filled with it. What we will do in this section is to identify typical factors that have been suggested to explain the initiation of economic growth, the continuance of the growth process, or the failure of dynamic impulses. A growth theory has a number of exogenous variables (like the capital-labour ratio or technical progress) determining an endogenous variable (like productivity). Development economists, as a rule, are critical of such "simple" models, since they regard important factors like urbanisation, literacy, or institutional development as endogenous. These factors, and not the increase of a dubious aggregate Y, income, represent development, which makes it difficult to decide what is cause and what is effect (see, for instance, Kuznets 1965; Myrdal 1968). It can be shown, of course, that urbanisation, literacy, and institutional development coincide with an increase in welfare. But the causal nexus remains disputed. Both approaches, the theory of growth and the theory of development, are policy oriented. While growth theory is looking immediately for the strategic instrumental variables by which growth can be stimulated, development theory is identifying factors that emerge together with an increase in welfare without necessarily being instrumental for it, but are linked to it and co-evolve with it.

We divide these theoretical considerations into classical and neo-classical approaches, the watershed between the two being Solow's path-breaking article of 1956. Both approaches are not mutually exclusive; on the contrary, there is continuity in the basic ideas. While classical theory incorporates institutional, cultural, and other explanations, neo-classical theory is more austere. Hence a third sub-paragraph will deal with such approaches from the more recent period.

3.1 Classical theories

The term "Smithian growth" already indicated that we find in him an explanation of the slow growth since the Middle Ages. It is the well known combination of division of labour and specialisation, which, through scale economies, lead to an increase in labour productivity. Yet at the same time they also permit the employment of mechanical or hydraulic equipment and of knowledge, in short of capital. Division of labour becomes manifest in the division into town and countryside, i.e. urbanisation, which saw an upsurge in 13th century Europe. Specialisation and division of labour presuppose larger trading areas, since their potential is determined by the size of the market. That makes all factors limiting the extension of the market obstacles to development, be they, like transport costs, natural by origin, or the likes of non-tariff barriers to trade, artificial.

Division of labour and specialisation not only presuppose larger markets, but also capital accumulation. Smith's concept of capital, later refined by the Austrians, is focused on time. This encompasses risk and uncertainty and the willingness to expose oneself to them. The necessary entrepreneurial spirit is not ubiquitous: "A merchant is commonly a bold; a country gentleman a timid undertaker" (Smith 1776/1976: 411). In addition, the institutional environment has to be favourable: "Order and good government, and along with them the liberty and security of individuals, were, in this manner, established in cities at a time when the occupiers of land in the country were exposed to every sort of violence" (ibid: 405). Despite this asymmetric distribution of institutions, a workable town–countryside division of labour will function only if the exchange of goods is fairly stabilised.

Smith was well acquainted with endogeneity: "... commerce and manufactures gradually introduced order and good government, and with them, the liberty and security of the individuals" (ibid: 412). He refers to David Hume who was even more explicit in this respect: "We cannot reasonably expect, that a piece of woollen cloth will be wrought to perfection in a nation, which is ignorant of astronomy, or where ethics are neglected" (Hume 1752/1985: 270-1). Development, and in its context growth of productivity, is a complex phenomenon where many factors are engaged: "Thus *industry*, *knowledge*, and *humanity*, are linked together by an indissoluble chain, and are found, from experience as well as reason, to be peculiar to the more polished, and, what are commonly denominated, the more luxurious ages" (ibid.: 271). Also Hume considers good government rather a consequence than a precondition of economic progress: "... progress in the arts is rather favourable to liberty, and has a natural tendency to preserve, if not produce a free government" (ibid: 277).

The other two great English classical economists, Ricardo and Malthus, are responsible for the verdict of economics as the dismal science. For with their theories they substantiated the statement that welfare will not grow above a certain maximum level. In Malthus, who saw the limit in the relation between population and economic growth, this is hardly higher than the subsistence level. Each productivity increase due to technical improvements or extended utilisation of land leads in the short run to higher per capita income. But the subsequent growth of population will bring it back to the long run average. So differences in productivity will only result in differences in population density. For Ricardo, who saw the limit in the restricted supply of land and the ensuing diminishing returns, this level may be somewhat above subsistence. His theory does not exclude Smithian growth in principle as does the Malthusian approach. However, also the latter is not necessary: the parameters of the population reaction to

changes in income may be such that a minimal welfare growth is possible. Only in the transition to modern economic growth there happens a transformation of reproductive behaviour and population growth declines with increasing income (see Galor and Weil 2000).

Classical growth theory took a decisive turn with Karl Marx whose empirical basis was post-Smithian growth, the experience of the first half century of modern industrial growth. Marx supplied both a theory of development and a theory of growth in the narrow sense. His development theory is based upon historical materialism, i.e. the interplay of technological and institutional development in which the primary impulse comes from the exogenous development of productive forces. Here the industrial revolution has established the decisive breakthrough – the development of machines that are powered not by animal energy any more, but by fossil fuels. Hence, production could be organised in factories which made possible a division of labour on a much higher scale. And these factories accelerated urbanisation to an unknown extent.

Crucial for Marx is revolutionising the production relations, the social division of labour materialising in the class divide that separates the character of the capitalist-entrepreneur from the wage labourer. The transition from simple commodity production typical of the pre-capitalist period to extended capitalist commodity production is explained by Marx's theory of primitive accumulation. This is not a history of primary savings, progressive division of labour, and urbanisation, as in Smith – although it is that, too – but it is a history "written in the annals of mankind with letters of blood and fire" (Marx 1867/1962: 743). To stabilise the capitalist production relations necessary for industrial production a special institutional matrix is needed which is provided by the social superstructure with government, law, ideology, education, etc. Every element of Smith's theory of development reappears: the free market, private property rights, entrepreneurs, good governance. They are indispensible for the increase of productivity in the capitalist system, and the capitalist system is unavoidable for secular economic growth.[12] However, Marx leaves no doubt about his sympathies. His predictions about the further course of history fall under the heading "*Marx the Prophet"* (Schumpeter 1942: 5) and will not occupy us here.

Let us turn to his proper theory of growth. Economic growth in the capitalist period is determined by capital accumulation. Especially in the second volume of *Capital* Marx (1885/1963) has elaborated his two-sector model of growth. The one-sector basis of it is the identity of output growth and the relation of the investment rate (= rate of savings) and the capital coefficient. Hence economic growth is determined by the capitalists, for only they are saving in Marx, and by the technological capital-labour relation which in the beginning may be assumed constant. The one sector version has been standard in growth theory till the 1950s under the name of the Harrod-Domar model. Centrally planned economies preferred the two-sector version of the Feldman-Mahalanobis type. Divergences in historical growth paths have to be explained by difficulties in applying technology, which in principle is a public good, and by differences in savings behaviour. The former necessarily appear when new technologies are introduced which have to be spread and understood. To what degree this can

[12] With its historical determinism Marx's theory is a highlight of Euro-centered historiography. It is hardly by chance that it coincides with the heyday of Europe's colonial expansion. Still in 1893 Engels (1893/1952: 473) has cautioned his Russian friend Danielson against an own Russion course of development: "On the other hand capitalism opens new prospects and new hopes. Just see what it did and still is doing in the West."

explain the leading role of English industry after the industrial revolution is controversial (Mokyr 2005). The latter, savings behaviour, depends upon numerous individual and institutional factors.

Classical growth theory does not tell us much more about our problem, the great divergence. There are, however, two extensions that became important for the subsequent progress of theorising: Schumpeter's theory of economic development and the Weber hypothesis. Schumpeter's (1911/1935) driving force is not accumulation, but innovation. Innovation, according to Schumpeter, is the enforcement of "new combinations" like new products, new production methods, the opening-up of new markets, new sources of input supply, new patterns of organisation, in short structural change in the widest sense (Schumpeter 1911/1935: 100-1). The emphasis is not only on "new combinations", but also on their "enforcement": next to the person who invents, discovers, has ideas the focus is on the entrepreneur who realises the vision of a new combination. As a rule this is a process of *creative destruction* (Schumpeter 1942: 83).[13]

While in Marx the entrepreneur was incorporated in the capitalist, Schumpeter separates both functions and ascribes the task to finance the enforcement of new combinations to the banker or the financial sector in general. It is the cooperation of entrepreneur and banker which is responsible for economic development. Schumpeter is much less interested in the banker than in the entrepreneur, the hero of his story. The enforcement of new combinations presupposes a supply of opportunities, inventions or ideas in general. It presupposes the character of the entrepreneur, a person with vision, will, and energy, and it presupposes a society or an environment that gives the entrepreneur room to deploy his energies and does not restrain him.

Europe has been innovative. Research, discovery, testing new ideas is part of European culture since the Middle Ages. Schumpeter (1942: 126) illustrates this drive with the history of painting from Giotto (1266-1337) to Picasso (1881-1973). A counterexample can be found in the painting of icons, of Islamic miniatures, and also in Chinese art where the concept of progress seems to be out of place and where tradition and continuity play an important role. At the latest since the Galileo-Baconian turn Europe is engaged with experimental science on an empirical basis, and innovation and originality have become central cultural values.

We mentioned already the so-called "Needham puzzle" (Lin 1995): China has disposed of numerous inventions much earlier than Europe, yet an industrial revolution did not happen. With discoveries it was the same story: China started to discover the world somewhat earlier than Europe, but only European entrepreneurs have used the opportunities for commercial profit. The figure of the entrepreneur is the *primum movens* of economic development in Schumpeter. He provides him with extraordinary capabilities and special motives – the nature of a leader. A less heroic version of Schumpeter's theory of development that does not need the eminent personality of the entrepreneur is Hayek's (1969a) "competition as a discovery process". The same basic principle is at work, finding new combinations. However, every utility maximising

[13] Marx and Engels have already recognised the relevance of creative destruction: "The bourgeoisie cannot exist without constantly revolutionizing the instruments of production, and thereby the relations of production, and with them the whole relations of society. … All fixed, fast-frozen relations, with their train of ancient and venerable prejudices and opinions are swept away, all new-formed ones become antiquated before they can ossify." (Marx und Engels 1848/2002: 222-3). This is one of the essential differences between pre-capitalist and capitalist development.

individual is active to this end if the environment stimulates competition. Hayek's new combinations are no spectacular innovations, but, as a rule, marginal improvements.

The environment that does not impede the activity of the entrepreneur, or the individual in general, was the third condition for economic development. It starts with the entrepreneur himself: a culture cherishing traditions and abhorring innovations is unlikely to concentrate the ambitions of active individuals on innovation. That is to say, we will encounter the entrepreneur only where he is an accepted role model. What Deepak Lal (2005) has called the *Hindu equilibrium*, namely an alliance of cultural stability and economic stagnation lasting for centuries, reflects a situation where innovation, the breaking up of equilibria, is not a commendable achievement. There also may be powerful interest groups opposing the enforcement of new combinations. Marx (1867/1962: 451) provides a European example quoting the hand-loom for ribbons. Its inventor allegedly has been drowned or suffocated at the end of the 15th century by order of the city council of Danzig to prevent the social consequences of this technical innovation. The city council of Danzig did only what is expected from good governance: to preserve the interests of the population and to protect property rights, values, and organisations. Evidently, a strong state is not always conducive to enforcing new combinations. On the other hand it is needed to protect the interests of innovators. Patent law does not by chance originate from 15th century Venice and 17th century England.

Scarcely 40 years after the publication of volume I of *Capital* Weber (1904-5/1965) published his paper on *The protestant ethic and the "spirit" of capitalism* where he traced back the transition to rapid modern economic growth to a transformation of the motivation structure triggered by the reformation. This was meant to be a counterargument to historical materialism: "Interests (material and non-material), not ideas, govern immediately the actions of men. However, 'world views' that have been created by 'ideas' quite often like switchmen determined the tracks in which the dynamics of interests have moved ahead the actions" (Weber 1920/1991: 11). That is to say, the immediately relevant interests will be conditioned by mental models (Denzau, North 1994). The reference is an indication of the fact that modern institutional theory ties up to Weber's insight that performance of economic systems is determined by their motivation structures which in turn depend upon ideas, the shared mental models.

Weber's proper hypothesis is somewhat more concrete and relates to an empirical observation: "the predominantly *protestant* character of capital ownership and entrepreneurship on the one hand and of the skilled higher strata of workers on the other, namely the higher technically or commercially trained personnel of the modern enterprise (Weber 1904-5/1965: 29). The spirit of capitalism consisting mainly in the "obligation of the individual *vis-à-vis* the interest in enlarging his capital presumed to be an end in itself" (*ibid*: 42) follows from the protestant ethic of inner-worldly asceticism, rationality, and discipline. This implies the hypothesis that welfare is higher where Protestantism is the predominant creed. In addition to the spirit of capitalism Weber assumes that the rational, legal, and bureaucratic state – in contrast to the patrimonial, feudal, and redistributive state – is an important precondition for rationalising economic life and, hence, for efficient economic activity.

The latter argument has recently been revived by the governance approach (cf. Wagener 2004). Right from the start Weber's ethic hypothesis has aroused a host of criticism and empirical comments. Presently it is widely held that the relation between religion and economic growth in general and between Protestantism and welfare in

particular is not very robust (Iannaccone 1998; Acemoglu, Johnson, Robinson 2005a, p. 419). A recent path-breaking study (Becker, Wößmann 2009) will revive the discussion. For the authors confirm two statements: for one, Weber was right – religious affiliation may have economic consequences, secondly, however, Weber's theoretical explanation is wrong – not motivation derived from the protestant ethic is responsible for differences in economic development, but the human capital revolution triggered by the reformation.[14] Every Christian, according to Luther and Calvin, has to be literate to be able to receive the word of God, the bible. Here we have an apt example of Hayek's (1969b) unintended consequences of human behaviour and of an omitted variable.[15] As a consequence the Weber hypothesis can be incorporated without effort into neo-classical growth theory, where human capital plays an important role. Religious affiliation explains the almost instantaneous change in investment behaviour of the individual as well as of the state.[16]

The Protestantism hypothesis was only the beginning of Weber's endeavour to explain the differences in economic development of Europe and Asia. In his later writings on the sociology of religion (Weber 1920/1991, 1921/1998) and in *Wirtschaft und Gesellschaft* (Weber 1922/2000) he tries to show that the specific differences lie in two factors, in the development of the middle class especially in the medieval town, and in the development of occidental rationalism, in particular in the capitalist enterprise the system of law and the bureaucratic state, and thirdly in the development of experimental science (not unlike Schumpeter he sees the beginning of technical experimentation in Renaissance art). The endogeneity of these processes is stressed by Weber highlighting, for instance, the capitalist interest "in rigidly formal and, hence, predictable law functioning rather like a machine" (Weber 1920/1991: 141). Beyond Europe both are lacking: the capitalist enterprise and rational law. "In China, as in India and the realm of Islamic law and actually all over the world where rational legislation and jurisdiction has not prevailed, there obtained the rule 'arbitrariness takes precedence over the law'" (*ibid*: 108). The emerging capitalist enterprise asked for predictable law, and a rational system of law made possible the capitalist enterprise. In addition Weber saw the legal organisation of the medieval town stimulate individual autonomy, i.e. the separation of the individual from soil, clan, or caste: "A particular material law and due process owned by the town citizens as such or autonomous magistrates appointed by them were unknown in the towns of Asia. … Unknown to them, or only known in rudiments, was an autonomous administration and above all – this is most important – the character of the town as community together with the concept of the citizen in contrast to the countryman" (Weber 1922/2000: 12).

Let us briefly summarize what classical theory has taught us about possible development paths. It refers to two separate phases, slow secular Smithian growth

[14] Becker and Wößmann (2009) test their hypothesis not with international cross country data, but with data from 452 Prussian counties as most probably also Weber did. Here a ceteris paribus assumption is much more plausible than in international comparisons. For the Netherlands de Vries and van der Woude (1995: 205-13) had already emphasised the impact of human capital development caused by the reformation upon economic growth.

[15] The quoted observation of Weber shows that he was well aware of the differences in human capital endowment.

[16] In the terms of endogenous growth theory it implies that not changed relative prices caused the increase in human capital accumulation, but that the households changed their preferences. Such is also the conjecture of Clark (2005: 1318) who assesses a rapid increase in human capital in 17th century England.

which can be reduced to stagnation by population growth (the Malthusian situation) and rapid modern capitalist growth. What has also to be explained is the transition from the one to the other where population growth will play a decisive role. Three factors carry the weight of primary explanation: division of labour and specialisation, accumulation, and innovation. Quantitative differences in the impact of these factors are explained by secondary forces that help or hinder their deployment. Such are among others: the extension of internal and external markets, savings behaviour, the accumulation of technical innovations, economic policy. On a third level of explanation there are developments that influence these secondary forces as: order and security, rule of law, science and research, competition, motivation, and mental models. Classical theory of development describes secular as well as revolutionary changes in such tertiary factors which allow to explain the transition from the pre-capitalist to the capitalist stage. From Smith to Weber the authors were convinced that this was a specific European development.

3.2 Neo-classical growth theory

Solow (1956) initiates neo-classical growth theory. The basic model focuses on accumulation to show in the end that long-term stable growth does not depend upon accumulation, and thus does not explain the phenomenon of development vs. stagnation. It is an extreme simplification and all relevant variables are assumed exogenous, but it allows to spot the fields where knowledge has to be deepened to explain long-term growth. In our context it suffices just to hint at important features (see Mankiw 1995 and extensively Acemoglu 2009).

At the core of the model there is a neo-classical production function with constant returns to scale and diminishing returns to the factors capital and labour. Per capita production depends upon the capital-labour relation and the technological level of production. It is intuitively evident that capital can be accumulated by investment as long as the increase in production counterbalances depreciation of the capital stock. Due to diminishing returns to capital and a proportional rate of depreciation there is a critical point where *ceteris paribus* growth ceases – the so-called steady state. A similar prediction was made by Ricardo, only it was land that was in limited supply and showed diminishing returns. So Solow's crucial proposition reads: long-term stable growth does not depend upon accumulation, but upon technical progress. This determines the research program of neo-classical growth theory, to explain and to endogenise, if possible, the variables that were assumed exogenously given:

- savings and accumulation behaviour,
- technological development,
- population growth.

Now we should like to know in how far neo-classical growth theory can explain the processes of divergence and convergence. The stability property of the Solow model contains a convergence hypothesis: in the long run economies converge to the steady state and *ceteris paribus* they should reach a similar welfare level. Yet the *cetera* will hardly be *paria*. Different savings behaviour and different rates of population growth result in different steady states. Any plausible calibration of the model reveals, however, that this cannot account for the huge differences in welfare as documented in Table 1. One important element of the *ceteris paribus* assumption is the hypothesis that the production function is a public good, i.e. universally available and applied. This is not the case, since

the level of technology in use does not depend only on a technical blueprint – which may be privately controlled by a patent – but on many other communication and motivation factors that influence the adoption of best practice.[17]

The model does not explicitly contain a divergence hypothesis, but it may be derived from it. If technology is not freely accessible in the public domain, but for whatever cultural or systemic reasons may differ, welfare will diverge. So neo-classical theory can explain the century-long stagnation of the Chinese or Indian economy compared to first slow and then rapid growth in Europe by different rates of technical and organisational progress: the Asian economies exhibit till the late 20th century a stationary equilibrium, Europe a dynamic one.

So far so good. But what has caused the differences in the rates of progress? Before neo-classical theory embarked on answering this question with the theory of endogenous growth, it added a closely related new factor – human capital. The assumption of homogeneous labour was dropped and different qualities of labour were introduced resulting form an investment process equivalent to capital formation. In its most simple version the production function is expanded by a new factor of production, human capital. Under the same assumptions as before the results will be equivalent: there is a steady state and the higher investment in human capital the higher will be the welfare level. More refined models incorporate human capital in the factor labour (Acemoglu 2009).

The extended model explains much better existing differences in welfare. It also explains the paradox of capital mobility: high observed differences in productivity and a plausible calibration of the simple model result in considerable differences in rates of return that should lead to high capital mobility and, hence, convergence. This is empirically not the case. Capital moves only scantily into less developed regions, for human capital cannot be used as collateral and physical and human capital are complements. In short, "most international differences in living standards can be explained by differences in accumulation of both human and physical capital" (Mankiw 1995: 295). This proposition did not remain undisputed. For it is based on the above mentioned assumption that technology is a public good. If we do not accept the assumption, welfare differences are caused by different rates of accumulating physical and human capital, different rates of technical and organisational progress, and different intensities of factor utilisation. Both, divergence and convergence of regional welfare levels, are possible.

There remains the question: what causes different rates of accumulation and progress and different intensities of factor utilisation? What are the growth factors on the second level? *Sensu stricto* neo-classical theory disregards this question. For by endogenising savings behaviour, formation of human capital, and technical progress it explains growth on the first level by rational decisions of *homo oeconomicus* (compare fn. 2 above). This stance is gradually softened, however, and growth is seen in its historical and social context. Most authors answer the question in a more or less *ad hoc* way: what

[17] An illustrative example is mentioned by Maddison (2007: 164). In 1792-3 Lord Macartney carried 600 cases with presents from George III to the Chinese court containing specimens of technically most advanced products from England. They were politely received and sent to the cabinet of curiosities: "there is nothing we lack … We have never set much store on strange or ingenious objects, nor do we need any more of your country's manufactures". One may be sure that today such "strange or ingenious objects" would be sent immediately to the R&D department of the respective enterprise to be analysed and, if possible, copied. This raises a reverse problem – the protection of intellectual property.

could help or hinder investment, R & D, the adoption of best practice. On the negative side a number of factors can be identified such as market imperfections, barriers to trade, political instability, underdeveloped financial markets, macroeconomic instabilities, the size of the state, deficient communication and transport infrastructure, limited economic freedom (see, for instance, Alesina und Perotti 1994; Temple 1999). More recently good or bad governance has attracted special attention (Kaufmann, Kraay und Zoido-Lobatón 1999; Wagener 2004). It should be clear: such second level growth factors have directly nothing to do with neo-classical theory, but complement it. We will treat them, and possible tertiary factors, in a separate section.

Neo-classical theory is also reticent about population and, hence, does not deal with the Malthusian situation. As a consequence the transition to modern economic growth cannot be explained endogenously. This problem is approached by the so-called unified growth theory (Galor und Weil 2000, Galor 2005). It models a dynamic system with two regimes, the Malthusian and the regime of modern economic growth. In the Malthusian regime there is slow technical progress positively correlated with population growth. A slow population reaction allows for a minimal increase in welfare – Smithian growth. The increase of population accelerates technical progress, and above a certain critical value a gradual change of regimes will take place. In the transition period production and population will grow more rapidly – the first phase of industrialisation. In the course of industrialisation, however, technical progress will become dependent less on quantitative and more upon qualitative population development. An increased demand for human capital changes reproduction and investment behaviour of households. The positive correlation between technical progress, welfare increase, and population growth is reversed: the transition from quantitative population growth *cum* technical progress to qualitative population growth *cum* technical progress has taken place and the increase of welfare gains momentum.

This theory looks very plausible. However, it is incomplete. Economic growth is treated here as a quasi-natural inevitable and not as a historically specific process. The century-long stagnation of China and India and the huge difference to Europe thus have to be explained exogenously. Table 3 makes clear that in all three regions the second millennium saw a considerable increase in population which, according to Galor and Weil, should have set in motion their dynamic model. Yet in China and India the transition from the Malthusian to the modern regime did not take place until very recently.

3.3 Growth factors: the second and third levels

Growth is often thought to be equivalent to investment in physical and human capital and to technical and organisational progress.[18] Now we should like to know: how are these processes set in motion, what is sustaining them in the long run? Which are, so to say, the fundamental factors of growth? Acemoglu (2009) classifies such factors in a more or less *ad hoc* manner under four headings: chance, geography, institutions, and culture. Among these institutions (by which he understands formal institutions whereas the informal ones fall under culture) turn out to be the most important. Assuming that

[18] It is, however, only a quasi-identity. It may depend on investment, but investment is not a sufficient condition for growth. For neo-classical theory has shown that great investment efforts may end in a steady state. And empirically we have observed the socialist economies where high investment rates and a high level of education did not result in a high welfare level.

the anthropological starting situation is the same all over the world, i.e. the definition of and the desire for welfare and the basic ability to provide oneself with such welfare, then individual societies differ in accordance with the circumstances and factors that will help or hinder corresponding decisions or will make them impossible. These are evidently decisions about accumulation of physical and human capital and about the development and adoption of technical and organisational combinations. Hence the fundamental hypothesis must be: the greater individual freedom of decision, the higher will be the long-term level of welfare. Slightly different is the starting hypothesis of North and Thomas (1973: 1): "Efficient economic organization is the key to growth ... Efficient organization entails the establishment of institutional arrangements and property rights that create an incentive to channel individual economic effort into activities that bring the private rate of return close to the social rate of return".

This fundamental hypothesis excludes an alternative one which for a long period was predominant in development economics. According to it not individual decisions and individual adjustment to circumstances are the *primum movens* of economic development, but collective, ultimately public organisation and planning. Centralised decision making and regulation, developmental planning, preference of large production units, autarky or at least import substitution, forced savings – in short state intervention is decisive for growth and welfare.[19] The Soviet system was the model case of this policy. In the 1950s and 1960s it was also to be met in an attenuated form in many less developed countries like India, but also in emerging economies like Mexico and Argentina. Development theory has dismissed this approach in the 1970s and it disappeared for a certain span of time from economic discussion (Thorbecke 2006). The liberal alternative reappeared in the so-called Washington consensus which represented the consensual conviction that free markets, secure private property rights, and stable money together with good governance and some degree of social security will most probably do the job (Williamson 1990; Rodrik 2005).

Divergence or convergence of economic development in socialist planned economies is therefore a classical natural experiment for growth theory. The communist countries, at least those of Eastern Europe and East Asia, were characterised by high rates of accumulation in physical and human capital. Lagging behind the developed Western world can be explained in the neo-classical model only by a different intensity of factor utilisation and different rates of technical progress. This corresponds with many empirical findings about failing innovation in these countries (cf., for instance, Wagener 1996). The growth push after transition to more private activity and competition, which we observe above all in East and South Asia, is the result of high rates of accumulation and higher factor intensity. It becomes quite clear that the crucial cause, however, is to be found on the second level of the economic system and its transformation: cutting back state interventions and introducing open markets and entrepreneurial freedom, i.e. in a decentralisation of decision making and opening up the economy to competition.[20]

[19] Quite often this hypothesis is restricted to the case of delayed industrialisation (Gerschenkron 1962). This implies that on the second level there are two different growth models, the one competitive individualistic for highly developed countries, the other collectivist planning for backward countries.

[20] Lin (2007) sees the primary cause in the policy switch from a *comparative advantage defying strategy* to a *comparative advantage following strategy* that was implemented by intelligent governments. This has the advantage of explaining the instantaneous upsurge of Chinese growth without relying on time-consuming institutional changes. Yet it does not make obsolete the concomitant systemic change.

Impediments of freedom of decision making are multifarious: material, social, cultural, cognitive, motivational. Pareto (1906/1971: 124-5) summarily called them obstacles to individual utility maximisation. In the first instance these are material costs. Costs are also caused by social institutions and policies, while on the other side a *raison d'être* of social institutions and policies is their cost reducing potential. To name just a few such obstacles:

- Natural obstacles, like resource endowment, geographical advantages or disadvantages, influence the intensity of factor utilisation.
- Transaction costs determine the exchange opportunities and, hence, the division of labour and specialisation. Institutional economics has taught us that this is wide field:
  - Elements of the legal system like contract law and an impartial jurisdiction are important for horizontal exchange relations.
  - A well functioning financial system will lower the costs of financial transactions and thus increase their potential magnitude.
- The containment of risk and uncertainty influences exchange, production, and investment behaviour – a field at least as wide as transaction costs, and again the legal and the financial systems are central:
  - Freedom and security of mobility of persons and goods
  - Regulation of liability
  - Secure property rights
  - Political stability
- Factors that influence directly the scope and motivation of action which in a situation of underdevelopment can become rather high obstacles:
  - Entrepreneurial freedom
  - Competition
  - Incentives
  - Infrastructure
  - Economic policy
- Tradition and progress: attitudes to change in the material, social, cultural, and cognitive spheres determine the entrepreneurial spirit, the creation of knowledge and its application as well as the disposition to appropriate best practice as soon as possible.
- Social bonds or what has been called social capital.[21] The channels through which these factors influence economic decision making are manifold, but in the end they affect the intensity of factor utilisation:
  - Trust
  - Communication
  - Norms, for instance, about opportunistic behaviour or corruption.

Implementation of the social factors in institutions, organisations, policies, attitudes, and mental models is specific to history, and geography of any given society. No general theory has been developed yet. Pareto's (1916/1935) huge effort in his sociology to come to grips with the social obstacles is not particularly encouraging. Hence it is quite understandable that scholars prefer to test single hypotheses. That does

[21] Putnam (1993: 167) defines social capital as "features of social organization, such as trust, norms, and networks, that improve the efficiency of society by facilitating coordinated actions".

not yield a hierarchy of the mentioned factors with respect to their welfare impact. The clusters may be plausible, but we do not know whether they are necessary or sufficient for economic growth, nor how their concrete institutionalisation is determined: "We know that growth happens when investors feel secure, but we have no idea what specific institutional blueprints will make them feel more secure in a given context" (Rodrik 2006: 979).

Despite the abundance of possible factors and despite the theoretical uncertainty about their impact the complex of governance and law has been particularly stressed (e.g. North 1990). Its relevant elements are relatively easy to identify and, on the other hand, its influence on individual decision making is intuitively evident. Here we find above all institutions that create and stabilise markets by securing contracts, protecting property rights, correcting market failure, and legitimising competition (Rodrik 2005: 1006). Such are basic functions that are indispensable for effective market development and that have to be implemented by society one way or other in order to sustain long-run growth. In short, the history of market creating and market stabilising institutions, which is essentially the history of government and law, is of utmost importance for the history of welfare development.

Where there is entrepreneurial freedom of action, cooperation, and communication and where the individual can privately appropriate the returns of his economic activity to a large extent, not only production factors, but also limited knowledge will be optimally used and developed. Such was Hayek's fundamental insight (e.g. Hayek 1945) that has become an integral element of the new institutional economics. In this context Greif (2005: 727-9) warns, however, against assuming definite causal relations. For one, there are developed markets without rule of law, and secondly modern market economy and the liberal state have co-evolved.

Reviving Menger's (1883/1969) distinction of organic and pragmatic institutions, Greif shows how organic institutions based upon private rules historically antedate pragmatic public institutions. Controlling the observation of contracts, organic private institutions presuppose direct personal relations and will evolve in the context of closely knit communities (clans, guilds, religious communities). They have low fixed costs, but rather high and rapidly increasing marginal costs. As a consequence markets will remain narrow and new business partners are hard to find. Large and growing markets, where partners do not have any personal relations, require pragmatic publicly sustained contract law. It has high fixed, but very low and non-increasing marginal costs. A major drawback of administering public contract law, according to Greif, is the fact that the wealth position of the partners will be disclosed, thereby enabling the ruler to take possession of their property. By implication public contract law will only be drawn on if simultaneously there is sufficient security of private property rights. The list of necessary public services could be extended by, among others, stable money, infrastructure, education, and health. But the discussion has focused on good governance and the rule of law that should correspond to the demands of the economic system.

In a modern market economy the assurances provided by government and law are essential for entrepreneurial initiative and investment decisions. Long-term growth depends also, as we have learned from Schumpeter and neo-classical theory, upon systematic R & D, innovation, structural change, and the adoption of best practice. Innovation also presupposes entrepreneurial initiative and investment. The development of science and technology, however, is perhaps less due to good governance and the

rule of law – apart from the protection of intellectual property rights. But we should not forget that setting free a hand that could plough a field to do research and development is an investment and a costly one in a rather poor society. How societies take such investment decisions, for instance by institutionalising monasteries or universities, is a so far unexplained chapter. Since the Middle Ages there are significant differences in this respect between Western Europe and Asia – a Buddhist monastery is not a Cistercian one. But there are no satisfactory general explanations on the second level why they have come to differ.

This brings us to the third level of factors relevant for growth and welfare. On this level we address the question why some countries or regions have good governance, good institutions, and dynamic attitudes while others have not. In this context it is important to distinguish between finding a new and efficient institution and introducing an already known efficient one. We know very little about innovation, not only in the scientific-technical sphere, but also in the legal-organisational sphere. Menger's above mentioned distinction between organic and pragmatic institutions refers to spontaneous and constructivist processes of development, but it tells us nothing about their conditions and their progression. Hayek (1969b) is very critical of constructivist approaches because sufficient knowledge is lacking above the level of the individual. Efficient institutions, according to him, are the spontaneous result of human action, but not of human design. Individuals agree on rules that turn out to be superior to their competitors. Yet once they have come to exist, they can be imitated and adopted, since legal-organisational innovations are public goods that can be transplanted like scientific-technical innovations, but unlike them can not be protected by patents. Such a constructivist procedure is, as a rule, the essence of transformation processes. Why they are slow to be copied and spread or do not happen at all in some places needs its own explanation.

If good institutions were Pareto-superior to all other regimes, the discrepancy between well governed and ill governed countries could be explained only by ignorance, an extremely high time preference making transformation costs prohibitive, or by stable multiple equilibria. An example of a highly stable stationary equilibrium is the so-called Hindu equilibrium for which Lal (2005) claims some 3,500 or, at closer inspection, still some 2,100 years. Not that India during this period has always been a comparatively underdeveloped country. But due to the equilibrium it was not in state to develop or to adopt the institutional elements decisive for economic growth. The foundation of this equilibrium in religious beliefs of Hinduism refers us again to Max Weber's "discovery" that the mental models of the East are characterised by passive unworldly absorption, those of the West by active theoretical and practical rationalism.

Somewhat more pedestrian is the statement that Pareto-efficient states are defined only for a given distribution of income and wealth. If transition to "good" growth stimulating institutions is liable to change the distribution to the disadvantage of the ruling elites, it most probably will not take place. If the ruling elites are stable – and religion, for instance the Hindu caste system, may play an important role in this context – then the stationary equilibrium will also stay stable. Seen the other way round this implies that incisive institutional changes presuppose the breaking-up of power equilibria which is also a form of creative destruction. This brings us dangerously close to Marx's theory of revolution.

Why some societies have experienced the emergence of rule of law and good governance and others did not, does not follow from this consideration. As we saw,

both should correspond to the demands of the economic system which they do if the important economic decision makers have influence in politics and law making: "Market development is thus fostered by a polity in which the commercial sector has a voice and influence on the function, policy, and organization of the state" (Greif 2005: 766). Where the merchants had a say in the Middle Ages, in the towns, the institutional basis of modern market economies has emerged. This insight is central to Max Weber's (1922/2000) analysis of the medieval town. The process was continued by the bourgeois society of modern times, and Marx was perfectly right to postulate a congruence of economic basis and political-legal superstructure. What he did not see was the possibility that the co-evolution of technological development (productive forces), organisational development (production relations), and institutional development (superstructure) fails to get off the ground as the example of Asia makes clear. Dynamics are not a historical law, but the lucky coincidence of advantageous conditions.

Transformation from a less efficient to a more efficient institutional regime, as most transformations, will see winners and losers. So it becomes an object of political economy or public choice theory. Decisions for social efficient arrangements will only be taken if they correspond with the private interests of the key figures. In a democracy this is the median voter, in less democratic systems these are the power elites. Political economy of institutional change (cf. Knight 1992; Knight und Sened 1995) and the theory of transformation (cf. Wagener 1997) have dealt with this problem. To lift a blockade of socially efficient arrangements in non-democratic regimes it is, as said, necessary to break-up power equilibria. This happens quite often after (lost) wars, revolutions, or economic crises. The break-up of the Soviet empire is a conspicuous recent example making clear, at the same time, that such an event need not lead to a better distribution of power and, hence, to a chance for better institutional arrangements. Chinese history is rich, too, with crises and break-downs that sometimes have caused radical system changes. In general, political-economic power is a central factor for welfare development on the third level. This is not the place to expound a theory of power. Suffice it to say that power is formally based on political institutions and materially on the distribution of resources. That makes it an endogenous element of the development process.

In this context Acemoglu (2009: 1058) has observed that authoritarian regimes produce less welfare and growth than participatory ones. Behind such a statement hide different connections of a short-term and long-term nature. In an authoritarian regime a concrete group monopolises power. This increases the probability of abuse of power, i.e. the security of private property rights is reduced and with it, as we saw, the functioning of other pragmatic institutions like contract law. The individuals will resort to more trustworthy organic institutions. This increases transaction costs. In the long run pragmatic public institutions are unlikely to develop.

The matrix of factors leading to long-term stable growth is rather complex and reflects the numerous interdependencies within the economic system as well as between the economy, politics, law, and culture. On the second level we have stressed two problem fields:

- Solving the strained relation between individual freedom and security. It demands an adequate regulation of interpersonal communication: contractual fidelity and protection against predatory activities. On the other hand, the role and organisation of the state have to be shaped in such a way that both freedom and security are

guaranteed. For a state that is strong enough to protect personal freedom and private property rights is also strong enough to violate both.

- The attitude towards progress and change. Most important in this context is dealing with the resistance to change and progress. Lal (2005: 261) has given a striking example of such a resistance for India: "Gandhi launches a diatribe against the three major agents of Western civilization destroying India – railways, lawyers, and doctors".

Welfare and growth presuppose on the third level that individual interests can be adequately articulated and put through. In a large anonymous society it is only the state which can create the necessary preconditions. At the same time it is essential to prevent individual interest groups from capturing the state. The appropriate instrument against a concentration of power in economy and society is competition. Creating and stabilising competitive equilibria, however, is quite a delicate process. The huge differences in welfare testify to the fact that only few regions succeeded in doing so. Many relevant factors are only the result of long-term historical processes. A participatory regime, for instance, is not created by adopting a democratic constitution, but requires corresponding attitudes that need time to build up. Good governance depends on a stock of social capital the accumulation of which may take very long periods of time (Putnam 1993).

Contrary to the implied growth pessimism we observe, however, that certain countries, like Japan, Singapore, Hong Kong, South Korea, Taiwan, China, and India, experience all of a sudden a considerable economic growth. How is this possible even if we grant that major institutional changes have concurrently taken place (Lin 2007: 12)? At the end of the 1970s China has reoriented her economic policy, but did not introduce democracy and rule of law. Since then her growth record has been spectacular.[22] India, on the other side, took over democracy and rule of law from the British Raj without any discernable increase in growth and welfare for several decades. Evidently, rule of law and democracy are neither necessary nor sufficient for the development of entrepreneurs and markets. It would certainly be rash, however, to jump into the conclusion that they are irrelevant.

The policy change in both countries in the 1980s and 1990s has in the first instance set free entrepreneurial initiatives with an immediate growth effect. The experience of South Korea and Taiwan, but above all of Japan, which carried out a comparable transformation much earlier, proves that in a sustainable development process the corresponding institutions and attitudes will endogenously co-evolve. The conspicuous difference between the transition countries in Eastern Central Europe and the Former Soviet Union has a number of causes. But not the least among them is the fact that the former dispose in their political and social culture of competitive market traditions while the latter do not. In short, setting free individual initiative and scope of action may lead to an instantaneous growth push. Stabilising this development will make it necessary to have it embedded in a corresponding institutional framework.

[22] When Rodrik (2006: 980) states that the Chinese upswing since the late 1970s happened with "changes in its system of incentives that were marginal in nature (and certainly with no ownership reform)", we would like to object. If farmers work the land individually and not collectively, or if enterprises decide on a decentralised level about resource utilisation instead of carrying out central plans, property rights and with them incentives have changed fundamentally no matter who formally owns the land or the enterprise.

4. Why Europe?

Are we now able to answer the question: why Europe and not China or India? Why Italy, the Netherlands, and England and not Spain, France, or Germany? North and Thomas (1973: 1) categorically state: "the development of an efficient economic organization in Western Europe accounts for the rise of the West". And the same is true for the European growth poles only that convergence happened much faster there because of weaker resistance against catching-up. Such an explanation runs the risk of being circular: efficient is what is successful. And secondly it runs the risk of being Euro-centred: only European arrangements will be successful. The first problem follows from the endogenous relation between growth and efficient organisation, the second calls for the search for possibly omitted variables. For the moment we cannot but be aware of both dangers.

The literature on the question "why Europe?" can be divided into three groups. The first (e.g. Pomeranz 2000) sees a more or less uniform Malthusian situation up to the second half of the 18th century. Only with the industrial revolution Europe and its transoceanic offshoots break away from the rest of the world. The second group (e.g. Clark 2001; Acemoglu, Johnson, Robinson 2005b) has in addition a primary phase of growth between the 16th and the beginning or the middle of the 19th century. The third group (e.g. North and Thomas 1973, Jones 2003, Greif 2006, Maddison 2007) conjectures that the start of European development took place 500 to 800 years before the industrial revolution from a level that most probably was lower than the Chinese one. All three scenarios accept as stylised fact stagnation in the Asian regions up to the late 19th century – the case of Japan – or up to the late 20th century – the cases of China and India. The first two scenarios focus mainly on England and rather neglect the earlier growth stories of Italy and the Netherlands. The third scenario is more European in scope and stresses the four successive growth poles.

Evidently, the three scenarios require different explanatory stories. In the third case divergence is to be sought in the "pre-Columbian" period of the high Middle Ages. In the first two cases incisive events are the conquest of the world by Europe (England) and the end of the *ancien régime*. Pomeranz (2000) underlines, as we have already seen, the importance of colonialism which allowed England to break up the stationary equilibrium and to enlarge its acreage abruptly. So it gained the decisive lead in the second half of the 18th century. Certainly correct in this story is the fact that all growth poles have been confronted with resource problems which they had to solve by (international) trade. However, transatlantic trade was dominated in its first phase (16th to mid 18th century) above all by luxury goods (spices, silk, porcelain, and the like). Only later bulk goods and raw materials were added (grain, meat, cotton, sugar, etc.). The Italian cities of the late Middle Ages and the Netherlands of the 16th to 18th century had similar resource problems that they, too, could solve only by trade. This was, however, inner-European (and largely unarmed) trade and already very early a trade in bulk goods.[23]

Acemoglu, Johnson and Robinson (2001, 2005b) took up the colonialism hypothesis (stressing geographically determined settlers' colonialism) linking it to the hypothesis that Atlantic long distance trade was decisive for European development.

[23] In 1670, at the height of Holland's "Golden Age", about 18 per cent of the carrying capacity of Dutch merchant ships was used in transoceanic trade, 12 per cent for Mediterranean trade, and 45 per cent sailed to the Baltic and other European ports (Maddison 2001: 77).

Economic growth implies *eo ipso* trade, and growth poles presuppose large markets, hence long distance trade. That growth poles were located preferentially at the coast and trade was conducted overseas seems obvious given the transport alternatives before the railway period. The restriction to Atlantic long distance trade leaves unmentioned the much earlier, also sea-bound development of Italy with Genoa, Venice, and Pisa and of Flanders with Brugge, Antwerp, and Gent and the rise of the Hanse league of towns. Also unmentioned is the catching-up of the West European interior regions that was only delayed by the higher transport costs.

The three authors complement their explanation with an institutional variable, the gradual replacement of the *ancien régime*. Successful were such Atlantic trading societies that had participatory political regimes already around 1500. This institutional variable is the decisive difference in the story of Acemoglu, Johnson and Robinson. For it is responsible for the fact that the Netherlands and England saw a rapid rise and not Spain, Portugal, and France. It also ought to explain why in the Mediterranean, after a period of flourishing Islamic trade, economic growth happened in the Italian cities, and why trade over the Indian Ocean did not lead to a similar development (Chaudhuri 1985). The third scenario focuses entirely on institutional variables. Already before the period of the great discoveries there were incisive events supporting development like the crusades mentioned by Adam Smith (1776/1976: 406). And there were colonising settlements, like the German Eastern colonisation, reacting to a shortage of land and a restriction of freedom in the old territories which opened new economic opportunities and new trade routes. Yet the third scenario stresses with North and Thomas (1973) that the exceptional European growth was caused by efficient economic organisation.

Briefly summarised, efficient economic organisation means: entrepreneurial freedom of action, well defined and secure property rights, enforceable contracts, law and order in general, i.e. a strong, but constitutionally controlled state and stable money. The crucial question now is which mechanisms are responsible for bringing about, or not, such an efficient economic organisation. In North and Thomas (1973: 26 und 97) it is rather simple: in the High Middle Ages the cause is exogenous population growth and in the period 1500 – 1700 it is the development of property rights by which the rising nation states react to their notorious fiscal crises. The decisive step to the protection of property rights and individual freedom has been taken, however, already in the Middle Ages. This was a period particularly moulded by law, i.e. by custom, tradition, and norms. Common law evolving in 12th and 13th century England with Magna Charta (1215) as an outstanding written document introduced a fundamental principle: the supremacy of law, manifested in rule of law and due process (Hogue 1966/1985). Continental development has basically not been much different.

The first hypothesis of North and Thomas (exogenous population growth) has been replaced by more complex political-economic explanations (Greif 2005, 2006) that go back to Max Weber's approach. The political economy of change to market-conform institutions stresses the emergence of a rational order and the political participation of commercial interests. Both processes originate in the Middle Ages, and we have mentioned already that Max Weber saw in the Medieval town the primordial cell of the modern capitalist economic system. The urban community – and this is important in order to distinguish it from similar urban settlements in China and India – has five essential properties: fortification, market, own magistrates and partly own law, a communal character, and at least partial autonomy (Weber 1922/2000: 11). Most important is the military independence of the Medieval town.

Why were the towns in India and China not able to emancipate themselves in a similar way from patrimonial rule? In the case of India Weber located the reason in the caste system: "For the castes excluded any solidarity and politically powerful fraternisation of the citizenry and the trades" (Weber 1921/1998: 27). This also frustrated any military power of the towns. "At least in the majority of the Indian towns the king and his public servants always remained master" (*ibid:* 65). Most towns were dominated by a court and a seigniorial bureaucracy that also controlled the military (Lal 2005). In centrally organised China not the courts, but the bureaucracy played a similar role. Here, too, military power was not decentralised as in European feudalism. And any urban "fraternisation" was thwarted quite similar to India "by the magic clinging together of the clans" (Weber 1922/2000: 34).

How were the European towns able to usurp seigniorial rights or why did the Medieval rulers tolerate the emergence of autonomous cities? Isn't the situation of China and India the normal case? Greif (2006) makes clear that political autonomy in the Italian cities developed in a period of weak power. De Vries and van der Woude (1995: 198-205) hold that urban structures in the Netherlands were favoured by a lack of feudal traditions. What was said above about legal developments in the feudal system, however, makes not lack of feudal traditions, but rather the lack of an absolutist period responsible for the stability of the legal system and with it the security of property rights. For as Hogue (1966/1985: 243) rightly remarks: "Doctrines of the supremacy of law and of judicial precedents cannot thrive in the presence of a divine-right monarch claiming to be supreme lawgiver as well as supreme administrator". The attempt of the Stuart kings to introduce absolutism in England ended on the scaffold and in the glorious revolution. As a republic the Netherlands had even less problems. Compared to China and India we may conclude that in Europe the power of the princes was constrained except for those states that temporarily were governed by absolutism.

During the European Middle Ages there was evidently a certain correspondence between the interests of the rulers and the merchants or what Hicks (1969: 38) has named "a 'feel' for trade […] it will be met if the rulers are themselves merchants or are deeply involved in trade themselves". The Italian city state was obviously the simplest solution. But also territorial princes might realize, perhaps by observing better faring neighbours, that a well ordered tax system is more productive than random expropriations and that secure property rights and well functioning markets support economic welfare and, hence, the tax basis. Where this is not the case like in India where the prince or the state is not willing to guarantee property rights (Chaudhuri 1985: 213), we encounter the syndrome that Greif (2005) described: weak property rights make anonymous contract relations improbable, concealment of wealth is the best protection against confiscatory interventions of the ruler, personal relations dominate trade.

Muslim, Indian, and Chinese merchants were highly specialised *virtuosi* of trade. But they had to operate without any noteworthy support from the state and therefore had to fall back on their personal relations often within clan or religious communities. In contrast the European merchants and entrepreneurs created a legal frame and an administration which opened a wider scope of action and reduced transactions costs (Chaudhuri 1985, Greif 2006). They were helped by the fact that their social standing and their political clout were considerably higher than in the Asian regions. "Trade remained a specialised occupation below the professions of arms, of administration, and even, in the case of China, of farming. The attitude of official contempt towards traders

in general is one of the best-recorded themes of Asian history" (Chaudhuri 1985: 214).[24] Just compare the reputation of the Bardi, the Medici, but also the Fugger and Welser. An Asian prince would not deign to take notice of a merchant. The king of France married a daughter of the house of Medici.

The modern legal system, according to Weber, is produced by two powers, by the capitalist interest in strictly calculable law and by the interest of the civil servants, represented by the legal profession, in a codified system. China lacked both (Weber 1920/1991: 141). In Europe, the capitalist interest asserted itself on two occasions: as mercantile capital in the Medieval town and as industrial capital in the bourgeois revolution of the 19th century and the emerging modern state. For the legal bureaucracy a similar statement is true: the demand for specialised legal advisers led to the foundation of universities in the Middle Ages, and after the break-down of the *ancien régime* the class of civil servants grew to unknown dimensions in the modern legal state. It would be wrong to assume that in India or China the stratum of bureaucrats was smaller than in pre-modern Europe. Rather the contrary was the case.[25] But next to penal law Chinese law was above all administrative law, and the Chinese public servant was a man of letters not a jurist. In India political relations were more of a patrimonial nature. Both Needham (1970: 82) and Lal (2005: 110) stress the lack of political power of merchants in China and India. Needham, and later also Lin (1995), hold this fact responsible for the absence of systematic R&D, while Lal deduces from it institutional stagnation.

The "discovery" of the role of the Medieval town for European economic growth by Max Weber reappears in many explanations of the great divergence, frequently without reference to Weber: "The fact that European civilization has passed through a city-state phase is the principal key to the divergence between the history of Europe and the history of Asia" (Hicks 1969: 38). Avner Greif focuses on the new social organisation in the autonomous Italian towns since the 11th century: "this particular societal organization – centred on self-governed, nonkin-based organizations and individualism – has been behind the behavior and outcomes that led to European-specific economic and political developments" (Greif 2006: 28). For the Netherlands de Vries and van der Woude (1995: 203) underline independence, individuality, and rationality that determined total life of the people in the Republic.

The new social organisation has produced not only a participatory political order, but also new production relations which finally resulted in the capitalist enterprise and, after the industrial revolution, in the factory system. The capitalist enterprise is characterised by objective and legal production relations, while its Asian counterpart has remained up to the most recent time a personal business and its capital private property of the entrepreneur: "Because it remained legally undefined and socially misunderstood (being associated with usury, engrossing, and monopolies), the area of the social ownership of capital, and of its specific utilisation, management, and accumulation, also remained confined" (Chaudhuri 1985: 228).[26] If Schumpeter's concept of new

[24] "Since its [the merchant class's] ideological vehicle, the republican anti-castrist sects of Buddhism and Jainism, lost out to caste in the early Christian era, the ideals and values of merchants have never had much appeal for India's rulers" (Lal 2005: 388).

[25] According to Lal's (2005: 107) estimate up to one quarter of the population were one way or other serving the prince in the Mughal period.

[26] In a similar vein Weber remarked: "Exactly those characteristic institutions that the citizenry of the Medieval occidental towns has developed are lacking up to the present day either totally, or they reveal a particular and different physiognomy. In China the legal forms and the sociological foundations of a

combinations is appropriate somewhere, it is here. The capitalist enterprise has produced the achievements of accumulation and innovation that caused Europe's exceptional growth and welfare. None less than Marx has highlighted this fact.

It was Marx, too, who related innovation and technical progress to capitalist competition. That is to say, the dynamics of modern economic growth have to be explained in the first instance endogenously. However, there happened in the 18th century a structural break leading to significantly higher growth in the 19th century. It may have been caused by institutional innovations becoming possible after the demise of the *ancien régime*. It is also to be observed that at the same time the frequency of path-breaking technical innovations increased what is meant by the term "industrial revolution". A similar incisive break happened in Japan in the so-called Meiji restoration (1868), but in China only about 100 years later. Both cases testify to the fact that institutional and organisational change rather than technical progress are decisive for development. After all Marxism in China was not opposed to modern technology, i.e. the technological revolution has invaded the country much earlier. It only had little positive impact upon welfare in general.

Europe has introduced the technical progress of industrial revolution while Asia, after a lengthy period of failing reception, took over the process of industrialisation rather lately. The literature about what could have caused this incisive event is filling book cases and cannot be reviewed here (a classic is Landes 1970). When Landes (*ibid.*: 33) writes "These, it seems to me, are the crucial values of that European culture and society that gave birth to the modern industrial world: rationality in means and activist, as against quietist, ends", he stresses what many other scholars have found: the industrial "revolution" took a long time to get off the ground. With the development of critical rationalism, the emancipation of the self-responsible individual, the determination to conquer and master the world in a planned and systematic way, it reaches far back into the Middle Ages, if not into the ancient world.

Not only the development of the rule of law, but also the corresponding emergence of the autonomous individual are responsible for modern economic growth. The autonomous individual alone can become active in the process of accumulating human capital. And human capital plays a central role, as was shown, in explaining growth on the first level. Clark (2005) found that this process gained considerable momentum in 17th century England, at a time when there was no change in the economic incentives (wage increases, for instance) for such investments. He conjectures exogenous causes, above all changes in household preferences. The reformation and the Galileo-Baconian turn may be responsible for such changes. It was reformation that gave the individual a new position in the world: it became fully responsible of itself.

Even the rulers invested into the formation of human capital which certainly stimulated the welfare of their subjects, but rather not their own hegemonic position. According to Galor and Moav (2006) it were the English capitalists who demanded from government higher efforts in education in the second half of the 19th century. For modern economic growth was confined by human capital because of the complementarity of physical and human capital. This is not the case with land and human capital and therefore education is neglected in societies where land ownership determines government politics (see Barro, Lee 2000). The formation of human capital, however, is not always governed by demand. For England was a late-comer among the

capitalist enterprise were lacking with its rational objectivation of the economy, as they rudimentally were present quite early in the commercial law of the Italien cities" (Weber 1920/1991: 96).

West European states as far as compulsory education, engineering schools, and workers' training are concerned. On the continent, above all in Austria, France, and Prussia, the state led an active education policy independent of industrialisation.

The re-interpretation of Weber's Protestantism hypothesis by Becker and Wößmann (2009), mentioned above, fits nicely into this pattern. Science had become systematic, above all science oriented towards mastering the world. The number of those who were able and willing to read the results increased all of a sudden and at the same time an active world view was stimulated. There were engineers and doctors before 1750 too, hydropower was used and stock breeding practiced. But all this happened without mechanics, medical science, hydraulics, biology. Specialisation and division of labour spread also to science and the professions. Typical is the professionalisation of academic jobs. This process happened all over Europe: "many if not most of the technological elements of the Industrial Revolution were the result of a joint international effort in which … "western" innovators collaborated, swapped knowledge, corresponded, met one another, and read each others' work" (Mokyr 2005: 1126). The systematic accumulation of knowledge capital, for instance in libraries or the *Encyclopédie*, is to be observed in the early phase of industrial revolution. There is very little known about human capital accumulation in India and China in pre-modern times. Both countries comprised a small stratum of highly refined intellectuals who produced a large body of literature. But the mass of the population, farmers and craftsmen, had nothing to do with it. The English colonial rulers did very little to change this situation in India. In China it was communism that brought an educational revolution like in the Soviet Union.

The fact that the first industrialisation push happened in England may be due to particular institutional and economic conditions. On the demand side England with its colonial relations in North America, the West-Indies, and India had a high market potential for the rapidly growing industrial production. Contrary to Germany and France, her internal market was fully integrated and it grew with the population. On the supply side the colonies played an important role providing raw materials. The question of financing industrialisation is controversial. While Marx depicted primary accumulation in the bleakest colours, Landes (1970: 77-8) found that the capital requirements of the early factories did not surpass the capacities of a single entrepreneur and that the financial system in England was already flexible and developed. In short, the industrial revolution met with a large and integrated market in England.

And why not China or India? After all, China knew numerous important inventions, as we saw, long before Europe. In India the study of mathematics, the basis of all science, was highly developed in the early period. The transition from the abstract logical system to systematic natural science, however, did not take place there. We should not forget the heyday of Islam: Arab mathematics and natural science, Arab medical science, and Arab philosophy, all were far ahead of Europe's in the 9th to the 12th centuries. Whatever may have been the cause (the Mongol invasion, for instance), this bloom came to a sudden end.

In the case of India the cause of stagnation, also in the cognitive sphere, is located in the Hindu equilibrium (Lal 2005).[27] "A ritual norm according to which any

[27] Marx (1853/1952: 326) was the first to apply the concept of equilibrium to India: "A country which was divided not only between Muslims and Hindus, but also between clan and clan, between caste and caste, a society whose fabric rests in a kind of equilibrium which derives from general mutual repulsion and constitutional seclusion of all its members". And it was Marx, not Rudyard Kipling, who formulated the

change of profession, any change in work technique could mean ritual degradation was certainly unfit to generate economic and technical revolutions" (Max Weber 1921/1998: 81). Innovation, progress, the permanent search for and experimentation with new ideas and devices in arts, crafts, and science were alien to the Indian society. Illiteracy is a problem up to the present day. A short description of the Hindu equilibrium can be found in a book of Nobel prize winner V. S. Naipaul (1977/2002: 43): "Hinduism hasn't been good enough for the millions. It has exposed us to a thousand years of defeat and stagnation. It has given men no idea of a contract with other men, no idea of the state. It has enslaved one quarter of the population and always left the whole fragmented and vulnerable. Its philosophy of withdrawal has diminished men intellectually and not equipped them to respond to challenge; it has stifled growth. So that again and again in India history has repeated itself: vulnerability, defeat, withdrawal".

The case of China is discussed under the heading of the "Needham puzzle" (Lin 1995) after Joseph Needham had acquainted the West in extensive studies with scientific and technical traditions of old China (e.g. Needham 1970). The puzzle, as already mentioned, consists in the fact that 12th or 13th century China was technically more developed and economically more productive than the West. Yet she remained on that level and did not even consider the introduction of systematic empirical science and technology pushing thus economic growth above population growth. Also in the pre-Galileo-Baconian period there were technical innovations, mostly the result of practical experience at the grass-root level. But dedicating one's intellectual life to systematic science and experimentation, and this in a close international context, introduced a new quality. That happened in Europe and not in China.

Lin (1995) offers a number of explanations some of which have already been alluded to:

- For the most time China was governed by an absolutist central power and a uniform ideological system that did not allow for public discourse. Therefore there was:
- no international competition as in the European system of states,
- no ideological competition as in Medieval Europe between church and state.
- Traditional China was a Confucian and a "physiocratic" state. Agriculture was the productive basis and merchants were the lowest social stratum.
- Incentives lured the intellectuals into a bureaucratic career. The Chinese state was governed by bureaucrats. They were not jurists, however, but men of letters. Entering the class of civil servants was the highest ambition of social mobility.[28]

We get the impression that keeping up a venerable equilibrium had a much higher status in the social hierarchy of values than creative destruction: tradition counted more than progress.

historical mission of England – creative destruction: "England has to fulfill a double mission, a destructive and a renovating one – the destruction of the old Asiatic social order and the creation of the material basis of a Western social order in Asia" (*ibid.*: 327).

[28] The examination for the civil service, obligatory since the Song dynasty (960 – 1275), required to learn by heart the Confucian classics, some 431 286 characters, a task that took on average six years. In addition voluminous secondary comments and the *belles lettres* had to be studied to be able to write the test papers and test poems (Lin 1995: 285).

It would be utterly wrong, of course, to think that new ideas, new combinations and their implementation were accepted without resistance in Europe. In the context of developing the philosophy of individualism and empirical science it turned out to be advantageous that Europe was divided into independent and self-conscious states and not a centrally governed empire as was China's experience for most of the time. This factor – Montesquieu has already explained it by geography – has been particularly stressed by Jones (2003). Competition between states tended to control the unrestricted power of rulers and stimulated them to support whatever was liable to sustain their country in the European concert of states. European diversity must be distinguished from the even greater diversity in India. The difference can be seen in the fact that European diversity and competition occurred between fully integrated national states, while Indian society was fragmented until the most recent period: "The caste order systematically segmented groups and linked them together in a codified, hierarchical division of labour. It was designed to resist the intervention of the state and state-made law, and it treated politics as extraneous" (Khilnani 2008: 230). In contrast to Europe, Indian diversity impeded mobility. The dichotomy of individual freedom and collective security is a product of the latest Indian history: only the Indian Union has constituted herself as nation. The multitude of rajahs and maharajahs did not know such a superstructure and the Mughal empire was only a relatively short-lived episode.

Competition within the European system of states geared substantial resources into armament whose spin-off effects are dubious even nowadays. The numerous Indian courts did not behave differently. Yet it was important for the development of Europe that intellectuals had an exit option when they met with resistance against their activities. Not only scholarship, but also the entrepreneurial spirit moved to the harbours of freedom when their scope of action got severely restricted. The persecution of Jews in Spain 1492 resulted in important economic impulses to Antwerp, Amsterdam, and Hamburg. The abrogation of the edict of Nantes in 1685 forced hundreds of thousands of Huguenots to emigrate to the Netherlands, Switzerland, England, and Prussia where their high level of human capital stimulated economic growth. A classical historical experiment, that can be compared to the partition of Germany after World War II, was the partition of the Netherlands in 1579 as consequence of the authoritarian Spanish regime under Charles V and Philip II. Up to that time Flanders and Brabant were the growth poles of the region; thereafter the centre of economic activity moved north to Holland and Zeeland which absorbed not only their brethren in faith, but also anybody with useful capabilities. The influx of human capital (and financial capital) was enormous.

It counts among the irrationalities of history that European totalitarianism of the 20th century brutally prevented the freedom of speech and other liberties. This again led to sizeable migratory movements which had an impact on the intellectual level and human capital in both the 'donor' and recipient countries. At the same time it underscores the fact that European development could have been quite different had such dark periods dominated its history.

5. Conclusion

Above we have identified four macro phenomena of development that asked for elucidation:

- the slow increase of welfare in Western Europe from the Middle Ages up to the publication of the *Wealth of Nations* (1776),
- rapid modern economic growth in Europe and its transoceanic offshoots following the industrial revolution,
- the lagging behind of the Asiatic areas India, China, and Japan and their catching-up process,
- the succession of economic leadership or *pôles de croissance* during the last millennium.

Did we succeed in explaining these phenomena? Strictly speaking – no. For we do not have a general theory, but have provided a number of plausible explanatory causes only:

- classical theory of development and the Malthusian regime with Smithian growth,
- neo-classical growth theory, in particular endogenous technical progress and accumulation of human capital,
- institutional theory, in particular the emergence of an impartially operating system of law and a polity which supports it and, at the same time, cares for education, health, and social coherence,
- the development of the autonomous and self-responsible individual,
- a general attitude favouring the search for new ideas and combinations together with a positive attitude towards progress and risk,
- competition between the autonomous individuals, who are anonymously interdependent in the market, and between independent political systems.

The list could be extended and differentiated by the above explanations. To rank the factors into "more important" and "less important" would be highly desirable, but would imply the formulation of a general testable theory. Above the first level such models do not exist as yet and one can arguably doubt whether they are feasible. This leaves us with more or less plausible "thick descriptions". Our analysis has presented us with two types of growth theories:

- The approaches of, among others, Malthus, Ricardo, Lucas, Mankiw, and Galor who hold that growth can be explained sufficiently well on the first level by the behaviour of the rational individual.
- The approaches of, among others, Weber, Schumpeter, North, Acemoglu, and Greif who see in the explanation on the first level only the causa proxima and look for more fundamental factors in the institutional framework determining rational behaviour.

Systematising the influences behind the extremely large divergence between Europe and Asia in the 19th and 20th centuries or the changes in economic leadership

within the West since the Middle Ages seems to be too complex a task to allow for a simple testable model. Clearly enough, Japan, China and India started to catch-up with the West when they discarded attitudes, institutions, and policies that had a negative impact upon development and adapted or transplanted more successful ones according to Western experience. Telling a long story in one sentence, one might say: Europe was no special case, but followed the "natural" course of the world being guided strongly by economic rationality and being the least diverted by other factors. However, the opposite statement will cover the facts as well: Europe was a special case where advantageous conditions concurred that resulted in the take-off.

Such propositions, however, only reflect the abstract side of the story. The concrete one consists of, among others, the Medieval town, the separation of Church and State, the emergence of empirical science and the university, of Renaissance, Reformation, and Enlightenment. It is represented by persons like Giotto and Leonardo, Galileo and Newton, Descartes and Leibniz, Locke and Hume – and not the least by Adam Smith and the economists around Dr. Quesnay who made the wealth of nations object of scientific discovery. They all promoted the break-through of rationality. History took a different course in China and India. Not the concrete persons and developments are missing, but adequate equivalents that could, for instance, break up the Hindu equilibrium. For want of such equivalents in these regions economic rationality and dynamics set in with a rather long delay.

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