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The Origins of Western Superiority **A comment on Modes of Meta-History and Duchesne's** **Indo-Europeans Article**

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The Rise of the West, the name given to the ascent to global technological, productive, trading, military, and colonial domination of the globe in the 18th and 19th centuries by the small nation-states and mini-empires of Western Europe, once seemed a simple affair.

It was really all black and white, or West and non-West. The West had an early advantage in the modern rational inquiry of the Greeks, which combined with the political invention of citizenship and the arts of comedy, tragedy, philosophy, logic, geometry, democracy, atomism, medicine, cartography, cosmology, and so much more. The Romans added a legal tradition, which became the basis for modern bureaucracy, and civil engineering, from concrete to all-weather roads to aqueducts. The medieval period was more than just a passive bridge to the Renaissance, adding improvements in armor, fortifications, and agricultural technology. The Renaissance then brought advances in invention, the arts, and a revival of citizenship; the Reformation unleashed individuality and free thinking about God and nature; the Scientific Revolution and the Enlightenment then ushered in the modern era of technologically and militarily advanced nation-states. From an early date, everything was dynamism, creativity, exploration, and fruitful innovations.

Outside of Europe, by contrast, people slept the sleep of the ages. From the foundations of the Vedic, Islamic, and Chinese civilizations, despite the undoubted creativity of their early foundational texts and philosophy, all that followed was incremental elaboration and minor variations. Patterns set millennia before remained largely intact until the encounter with dynamic Europeans. From Marx and Weber to McNeil and Landes, this was the lens of comparative and global history by which the non-West was perceived: intricate but long-standing cultural patterns, intensive but stagnant productive technology, enormous classical achievements but minor further advances.

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Ricardo Duchesne offers the latest form of this argument. He stresses that European society was unique in its restless energy, going back to its earliest Indo-European origins. There he finds an ethos of individualistic, aristocratic leadership rooted in personal achievement. While he grants that the ideas of honor and leadership underwent many changes over time, and that one cannot draw a direct line from the Indo-European social character to the Scientific Revolution nearly three thousand years later, he nonetheless argues that the age of European exploration, the Renaissance, and yes, the Scientific Revolution all reflect the energetic, individual pursuit of achievement that he demonstrates in Indo-European social structure and that he claims was absent in the other great civilizations of Eurasia.

The problem of the Rise of the West has become ever-greater and more complex in the last two decades. The “California School” scholars (including myself) have documented deep parallels between the material and political dynamics of European and Asian societies up through the early 19th century. We find that in many respects, despite their restless energy and the undoubted achievements of the Greeks, the growing quantitative record of economic history shows that Europeans were laggards, not leaders, in many areas. In the 10th and 11th centuries, Islamic scientists developed empirical experimental methods and advanced astronomy and navigational instruments (when Magellan rounded the cape in Africa and confronted the expanse of the Indian Ocean, he relied on the maps and tools of Arab explorers to find his way). By the 15th century, Chinese explorers and merchants had already found the way to India and Africa, and left colonists throughout southeast Asia. Indian textile merchants dominated global production and sales of cotton goods, with trading networks extending across central and east Asia. Asians pioneered double-cropping, multiple crop rotations, and the one-piece iron ploughshare; gunpowder and the compass; paper and printing; and documented natural phenomena such as supernovae long before Europeans.

Indeed, before 1492, the world of Europe was a confined and limited one; limited by the Atlantic to the West, the arctic to the North, the steppes and Siberian expanse to the East, and the powerful Ottoman Empire to the south and southeast. Very few Europeans reached beyond the eastern Mediterranean; hardly any saw the Indian Ocean or the civilizations of India and China. If it seems madness that any Europeans could have thought the world to be flat given the obvious evidence of ships going over the horizon it is nonetheless reasonable that they thought the earth to be bounded, for that indeed *was* the shape of the Europeans’ world at that time. Meanwhile, for Chinese, Indian, and Arab merchants, the Indian Ocean was their lake of constant activity and intercontinental trade. The Europeans’ intellectual world was bounded as well, uniformly locked into Catholic or Orthodox Christianity, excepting only the reviled Jews; whereas Asian societies mingled Islam,

Christianity, Hinduism, Buddhism, and Confucianism in the same territories, along with their many variants.

Given this clear lead of Asian societies in exploration, production, manufacturing, seafaring and navigation, experimental science, pluralism and toleration, lasting well into the 17th and in some respects the 18th century, it has become far more difficult to explain how and why Europeans suddenly leapt forward, becoming by the 19th century masters of the world in all of these respects. From a region that in the 12th, 13th, 14th, and 15th centuries was pushed back on its heels by the Arabs, the Mongols and the Turks, Europe suddenly became the aggressor, driving into Asia and becoming the victor and conqueror.

Because this change was relatively sudden and relatively late, what is now labeled the “Great Divergence” of East and West (Pomeranz 2000) has become very difficult to explain, and attracted a range of increasingly diverse and even wild theories. What was once easy to explain in terms of long-standing, deep-rooted, and persistent European advantages now is much harder to explain, as a sudden and late reversal in global fortunes.

There have been three major meta-historical responses to this dilemma. I believe they are all mistaken, but they have produced a remarkable outpouring of ‘big books’ on the Rise of the West and thus generated a large and controversial literature. The first approach—exemplified by Pomeranz and Ian Morris (2010)—is to simply say that there were no significant differences between Eastern and Western civilizations; that China and India forged ahead because of advantages in climate and natural resources that were critical up to the 17th century, but that Europeans then gained even greater advantages from their conquest of new lands, rich in raw materials, and their mastery of coal-based energy sources. In science, trade, and productivity, every civilization had its day, its own successes that contributed to the march of global progress. But the accidents of material history pushed the see-saw down on the Asian side for a while, then on the European side. It is logical that many in this camp see the see-saw swinging again, with the fast-growing Chinese economy of the present now pushing it down on the Asian side once more.

A second approach is to admit many similarities of Europe and Asia, but to identify some key economic or cultural feature of European (or sometimes, British) society that was unique and eventually gave rise to a burst of industrialization in the 18th century. But there are so many of these features, each one identified as the pivotal factor, that it is hard to credit any of them as being an adequate explanation. Rather, each seems to be touching one part of the elephant. These include competition and modern medicine (two of the ‘killer apps’ in Ferguson [2011]); respect for property and rule of law (North, Weingast and Wallis 2009, Acemoglu and Robinson 2012); exceptionally high wages in northwestern Europe (Allen 2009 Rosenthal and Wong 2011);

European rye and oats agriculture (Mitterauer 2010); the dominant role of merchants and commercial law in European city-states (Mielants 2007, Kuran 2012); the spread of an industrial Enlightenment (Mokyr 2010), the rise of 'bourgeois,' market-based notions of virtue and success (McCloskey 2007), or even an accumulated genetic advantage in commercial skills among the urban merchant elite (Clark 2008). The problem with these is that they are so specific (the relative wage level may apply to investment in textile machinery, but cannot explain the rise of the steam engine, which was originally used mainly to pump water more effectively than horse-powered chain pumps and then perfected to save on the use of coal) or so general (the notions of bourgeois virtue or respect for rule of law do not seem capable of explaining the rise of a mechanical model of nature, which was essential to modern science and technology) that they still leave major issues unexplained.

The third approach is to double-down on the idea of longstanding western superiority, postulating some critical, durable aspect of Western culture or social structure that provided a wide-ranging tendency towards innovation that eventually culminated in the scientific, political, and industrial revolutions of the 17th and 18th centuries. This is the approach of Landes (1997), Levine (2001), and is taken by Duchesne. In the latter's words: "In my book, I argue that the West has always been in a state of divergence from the rest of the world's cultures, characterized by persistent creativity from ancient to modern times across all fields of human thought and action. Within every generation one finds individuals searching for new worlds, new religious visions, and new styles of painting, architecture, music, science, philosophy, and literature—in comparative contrast to the non-Western world where cultural outlooks tended to persist for long periods with only slight variations and revisions."

The problem with the 'sustained western superiority' or 'western uniqueness' approach is that any single factor explanation crumbles before the immense diversity within both Western and non-Western civilizations, so that almost any tendency or factor can be found to be both present and absent at various times and places. For example, pluralism and rigid orthodoxy, individualist ideas and collectivist ideas, arbitrary tyranny and rule-bound beneficent rule, and yes, multi-century periods of cultural stagnation and frantic bursts of creativity can be found in *both* Western and non-Western societies in various times and places.

To point out just one instance, let us focus on Duchesne's claim that competitive individualism among free aristocrats in the leadership structures of Indo-European nomads was a unique feature of Western societies. Duchesne states that "Indo-Europeans prized heroic warriors striving for individual fame and recognition, often with a 'berserker' style of warfare. This aristocratic culture was the primordial source sustaining the unparalleled cultural creativity and territorial expansionism of Western civilization. The *Iliad*,

Beowulf, *The Song of Roland*, including such Irish, Icelandic and Germanic Sagas as *Lebor na hUidre*, *Njals Saga*, *Gisla Saga Sursonnar*, and *The Nibelungenlied* recount the heroic deeds and fame of aristocrats. These are the earliest voices from the dawn of Western civilization.”

This is an elegant formulation; but it is completely untrue. The earliest voice from the dawn of Western civilization is that of the aristocratic conflict of heroic warriors in the epic of *Gilgamesh*, from the non-Indo-European Mesopotamian culture. Much of *Gilgamesh*, and other elements of creativity (the notion of monotheism, the moral priorities expressed by the prophets, the poetry of the *Song of Solomon*) found their way into the Hebrew Old Testament, a wholly non-Indo-European text that had a rather more profound impact on later Western and European thought and development than the *Song of Roland* or *Beowulf*.

The Indo-European epics, and their social structure based on loose associations of aristocratic warriors led by chiefs whose position rested on personal success, was in fact *typical of steppe nomads* and not specifically Indo-European. Here is Donald Quataert’s (2005: 15) description of the 14th century Turcoman steppe nomads who flowed into Iran and Anatolia and founded the Seljuk and later Ottoman empires:

In their Central Asiatic homes, the Turcoman way of life was marked by ...social values that celebrated personal bravery. ... The Homeric-style epic, named *The Book of Dede Korkut*, recounts the stories of heroic men and women, and ... shows that the Turcoman polity was highly fragmented, with leadership by consensus rather than command.

So much for the uniqueness of Indo-European nomad epics and social organization! Of course, Duchesne could rightly claim that it is what the Indo-European Greeks and Latins did with Old Testament and what followed the Indo-European settlement that mattered. And it is also true that what Europeans did with paper and printing, with gunpowder, with Islamic experimental methods, and many other importations from the creative accomplishments of non-European societies had a greater impact than what was done with those items by the societies that invented them.

Yet this fact does not carry any proof of European superiority. Rather, it is a common feature of economic history reflecting the ‘catch up and leapfrog’ dynamics of lagging societies when they attempt to compete with more advanced ones. That is, if Europe was the lagging society up to 1700, then the direct encounters and efforts to compete in manufacturing and technology with the more advanced Asian societies that started after 1500 would eventually lead Europeans to seek and adopt newer technologies or apply older ones in new ways. This is the same phenomena as occurred with the rise of

Japan to world manufacturing prominence after World War II. Even though the United States invented the transistor, the technology of recording images on magnetic tape, and the oxygen-blast furnace for steel production, all of these technologies were turned into production of new commercial products and industries in Japan rather than in the U.S. It was Japanese firms that came up with transistor radio, the video cassette recorder, and became the global leader in basic steel production, because they were not bound by the sunk costs of US manufacturers and were desperately seeking new market niches to replace dependence on US production. For many years, western observers derided Japan as not being ‘creative’ but just ‘derivative’ for their dependence on developing products based on earlier US breakthroughs. The irony is that Duchesne characterizes Europe as “uniquely creative” for doing the very same thing, building new industries on the basis of creative breakthroughs originally made, but not fully developed, in other societies!

So I cannot accept Duchesne’s claims either for sustained European uniqueness nor for the especially Indo-European character of aristocratic epics (the Japanese samurai—elite warriors free of kin obligations who followed successful leaders—are another example, with their own epic tales of loyalty and victory in Noh drama, but they did not invent steam engines and seagoing war vessels either). How then to explain the undoubted superiority of European science and technology and productivity by the 19th century, when there is so little and ambiguous evidence of any general European superiority, and much evidence of European lagging, prior to 1700?

In my view, the only way forward is to abandon *both* the notion of Europe as having an inherent, durable advantage or superiority in some respect that goes back thousands of years, *and* the notion that there was no essential difference between Europe and other major civilizations until relatively late, around 1800. I thus would decompose the notion of the “Great Divergence” into a number of distinct smaller ‘divergences’ that arose in different times and places, and which eventually led to the critical advances in science, technology, and productivity that powered 19th century European dominance.

Let us start with commonalities—from about the first century CE, all of the major Eurasian civilizations featured agrarian bureaucratic territorial monarchies, in more-or-less constant military competition with either nomadic steppe peoples or other local monarchies or both. All had fairly dynamic economies, with improvements in cropping, livestock, manufacturing, and trade taking place over the centuries. All were also prone to major disruptions from epidemics and political upheavals, and indeed show parallel cycles of population growth and stagnation/decline and political stability and upheaval (Goldstone 1991, Turchin and Nefedov 2009).

However, there were also modest but significant geographic and cultural differences. Europe, as a whole an outlying peninsula largely cut off from the

rest of Eurasia, was relatively isolated and backwards in most of its manufacturing technologies. The civilizations of the Middle East, South Asia, and East Asia were by contrast in fairly constant communication and engaged in longer-distance trade and more advanced and specialized production. Whether by the ‘Silk Road’ or the sea routes in the South China Sea and Indian Ocean, most of Eurasia from the Middle East to China was linked by active trading routes, while almost all of Europe’s trade was internal, excepting only the mainly maritime exchanges through the Eastern Mediterranean and Black Sea ports.

During the entire millennium from 300 to 1300 CE, the leading Indo-European state was the Byzantine Empire, which despite its successes in trade and warfare, was culturally and scientifically stagnant for those centuries. In this period leadership in mathematics, astronomy, chemistry, optics, and manufacturing in silk, cotton, paper, and dyes passed to the Middle East, India, and China.

During these years, Europe was cementing a core intellectual culture based on Greek and Roman sources combined with Christian (mainly patristic, based on the work of early Church Fathers) scripture and interpretation. It produced a brilliant synthesis culminating in the work of Thomas Aquinas and other medieval scholars that established a cosmology and natural philosophy based mainly on logic, natural observations, and revelation. Medieval scholars also absorbed and deliberated on classical texts in medicine, mathematics, and botany, creating an intellectual edifice that featured Aristotle’s view of distinct heavenly and earthly spheres and the fixed and innate tendencies of objects to seek their ends, along with Ptolemy’s geography and astronomy, Galen’s medicine, and Euclid’s axiomatic geometry, all sanctified as compatible with the authority of Biblical revelation. This achievement, although an enormous intellectual accomplishment, aimed for a unification of all knowledge that in practice proved rather rigid and resistant to change. Again in contrast, the more cosmopolitan and pluralist civilizations elsewhere in Eurasia had developed more syncretic cosmologies and natural sciences based on inherent ideas of change and a plurality of natural forces. Whether it was the Buddhist view that material life is an illusion, or the Chinese view of nature as a constant balancing between yin and yang with the basic elements and forces in a constant state of ongoing transformation, Asian societies embraced change and diversity as the core principles of nature, in sharp distinction from Europeans’ emphasis on eternal stability in the heavenly domain (the crystalline spheres of Aristotle and the eternal circular motion of Ptolemy’s heavenly bodies) and the infallibility of scripture as interpreted by the hierarchy of the Catholic Church.

Thus Eurasia entered the 16th century with an array of technically and politically similar societies, but with Europe a bit more closed in on itself and

bounded in its outlook, a bit more backward in manufacturing and seafaring and productivity, and adhering to a hard-won synthesis of classical and biblical texts presenting a particular view of nature as following eternal regularities. Most Asian societies were a bit more open and syncretic, more advanced in observational sciences and productive technologies, and with natural philosophies also rooted in natural observation and logic, but with a much more plastic, ever-changing view of phenomena that readily accommodated changes in appearances.

In the course of the 16th and 17th centuries, a much deeper intellectual divergence arose; in this period Europe completely overturned its own classical synthesis, first questioning and then wholly replacing the reigning cosmogony and principles for the acquisition and verification of knowledge. At first, the discoveries of new lands, peoples, plants and animals in the New World simply led to skepticism about the absolute authority of ancient texts. But this was compounded by observations of supernovae, and then by comets, and finally by observations with telescopes, which rendered the idea that classical authors and biblical texts contained complete and accurate knowledge of the world untenable. Scholars such as Francis Bacon and Rene Descartes ceased the work of building on the foundations of classical and theological texts that had characterized the previous thousand years, and instead called for creating wholly new structures of knowledge. For Bacon, rejecting Aristotle meant turning to a program of inductive empiricism to gather and sift knowledge; for Descartes rejecting Aristotle meant turning to a program of pure deductive logic starting with the nature of mind. In the 17th and 18th centuries, a contest arose between the 'ancients' and the 'moderns' that was finally settled with the moderns as victors. Ideas ranging from the stationarity of the earth to the divine right of Kings were assaulted and cast aside. By contrast, at the very same time, the Ottoman and Chinese empires were facing their own assaults, from heterodox ideologies and from dynastic and regional rebellions. But in these cases adaptation rather than rejection of the past prevailed; whether it was the Manchu espousal of neo-Confucianism, or the Ottomans' selective adoption of western technology while reinforcing Koranic and traditional Ottoman faith and social values, there was as of yet no shattering of traditional authority.

The changes in Europe led to another divergence, this one *within* Europe: by the 18th century, parts of Europe had completely broken with the authority of the Pope and withdrawn from the Catholic Church, and completely replaced the authority of classical Greek and Roman authors with the new mechanical philosophy of nature and new findings based on instrument-driven experimental science (Carroll 2006, Goldstone 2008). These Protestant regions (the UK, Netherlands, Prussia) embraced pluralism, Reformed Protestant churches, and moral and natural philosophies based on the 'New

Science.’ Other parts of Europe, dominated by the Counter-Reformation, adopted much of the new science but selectively rejected certain elements as contrary to and unreconcilable with scripture; these regions (Spain, Italy, and later Poland) were reclaimed for the Catholic Church whose now modified views of natural knowledge still held Papal and biblical interpretations as the last word. France remained somewhat in the middle, geographically and intellectually; its leading thinkers adopted the mechanical model of nature and made crucial breakthroughs in modern chemistry and mathematical physics, yet French science remained highly mathematical and logical, eschewing Newton’s views of gravity and mechanics until the 1730s. Indeed Newton’s physics was not taught in French universities until after the French Revolution (Henry 2002).

Even these changes, however, are not sufficient to explain the industrial revolution. That required yet a third divergence, even within the circle of countries that fully engaged and accepted the new mechanical philosophy. This time, it was a difference in how the intellectual climate intersected with social networks. In France, and to a lesser extent the Netherlands, academic life remained separate from that of commerce. Scientific thinking took place in the universities, laboratories, libraries and armories; commerce took place in the streets, restaurants, and shops. In England and Scotland, this was not the case. Men of commerce and men of science came together in the Royal and provincial academies, interested in how scientific and technological advance could be harnessed to improve output, quality, and product ranges for producers and consumers. Scientific instruments became a popular, even essential element for gentlemen and prosperous bourgeois, and demonstrations with scientific instruments increasingly became the criterion for establishing new knowledge, in preference to natural observations or logical argument alone (Jacob 1997). The intersection of the intellectual climate and commercial networks produced men like James Watt and Matthew Boulton, as well as James Keir and Humphrey Davy—men who communicated with scientists but whose focus was on making useful products. It also produced the wave of civil and mechanical engineers who produced macadam roads, new processes for making iron, steel and cement, rotary presses, machine tools, and of course the new textile machinery and steam engines and locomotives.

So to those who say the Rise of the West was rooted in a longstanding superiority or greater inventive or innovatory tendency in Europe; and to those who say there was no real difference between Europe and non-Europe and that material contingencies—“coal and colonies”—produced the great divergence; and to those who say there was one particular institutional or economic factor that arose after 1500 that led to Europe’s rise, I say, with great respect, no, no no.

That is not to say that there were not long-standing differences—there were, but for most of the last two thousand years those differences kept Europe more isolated, more technologically backward, and more ideologically rigid than the leading areas of Asia. It is not to say that there were not great similarities in political structure and material living standards, as those are evident in the parallel political and demographic cycles across Eurasia from at least 1500 to 1850. And it is not to say that many particular factors account for specific differences: non-Europe had no concept of citizen sovereignty; wage levels did vary widely across regions and continents; European cities and their commercial residents did gain a more dominant political and cultural role; Europeans had superior skills in some areas (clockworks, naval armaments) but inferior skills in others (ceramics, textiles, dyes); but all these one-factor explanations, though important parts of the story, remain partial at best.

Rather, I believe the full story has to reflect a series of dynamics and divergences that gradually separated once-parallel flows of development into ever-more differentiated streams, several of which led to the scientific, republican, and industrial revolutions in the 17th, 18th, and 19th centuries.

We can put this story in terms of the dynamics of complex systems. The great civilizations spawned in the early part of the 1st millennium—Latin and Greek Christendom, the Islamic Caliphate, Hindu India, and Confucian China—proved remarkably resilient over the following centuries. Despite wars and conquests, epidemics and famines, dynastic struggles and heterodox religious movements, they remained basically true to their founding visions. Even in Europe, the ideal of the Holy Roman Empire did not die until 1806, some fifteen hundred years after Constantine created a Christian Imperial Rome.

These civilizations thus had the property of stable equilibria—even when greatly disturbed, they had self-restoring features, such as an elite committed to a core culture, key sacred defining texts that maintained their role at the center of that culture, and principles of rule including hereditary leadership, elite privileges and religious support for both.

In order for a truly modern science to emerge, it would be necessary to break out of that equilibrium, overturning the authority of the sacred texts and the power of the monarchies and aristocracies to ban or punish skeptical and heretical ideas. This proved very difficult to do. Even when presented with evidence of new realities, new instruments, and new ideas, the traditional systems of Catholic authority in southern Europe, Caliphal and kadi authority in Islam, brahmin authority in India, and mandarin authority in China remained entrenched and prevailed.

It took a number of discrete and cumulative disturbances, or divergences, occurring over several centuries, to break free of this equilibrium so that radical changes could occur in northwestern Europe and particularly in

Britain. First, the flood of new empirical knowledge after the discovery of the New World and the inventions of telescopes, microscopes, vacuum chambers and other scientific instruments forced Europeans to confront inadequacies in their classical inherited natural philosophy. Other societies could absorb these discoveries without feeling those inadequacies for they were more cosmopolitan and syncretic, and their philosophies readily allowed for changing appearances and diverse patterns in the world.

All of Europe contributed to the search for an alternative to the classical/medieval synthesis, and to the development of a new mechanical philosophy. However, a second divergence was necessary for the new philosophy to take root. In some regions new Reformed Churches welcomed the new philosophy, while in others the reaction of the Catholic monarchies and clerics limited the change. From 1550 to 1700 it remained uncertain whether the independent Protestant nations would succumb to the superior manpower of the Catholic monarchs, with first Spain then France threatening to control the bulk of Europe. Yet Elizabeth I and then William III preserved England and Holland as independent Protestant states; Prussia and Sweden also gained strength. Religious pluralism, empirical inquiry, and new models of nature and science thus survived and developed.

Finally, a third divergence arose in the 18th and early 19th centuries in Britain, where commercial networks and scientific networks intersected, overlapped, and enriched each other, directing much scientific effort and knowledge into the tasks of improving materials, production, transportation, construction, printing, public health, navigation, time-keeping, tools, agriculture, and energy, giving rise to what we now call the Industrial Revolution, even though this had no discernible effect on standards of living and material culture until well into the nineteenth century.

Thus what we see in global history is not 'Difference' or 'Divergence' as such. Rather, we see a series of divergences that first placed Europe on a distinctive intellectual trajectory that led to modern science in sharp contradiction and even outright rejection of its classical/religious inheritance; then to the institutionalization of the new science in certain areas without strict religious censorship, so that science could spread and attract followers and continue to develop; then to the integration of the methods and findings of the new science with commercial interests to produce practical inventions in ever-increasing number and variety. By the end of this accumulation of disturbances or divergences, large parts of Europe had been set on a course where the growth of knowledge by experimental inquiry and its application to production (and weaponry) had become an end in itself. By the 19th century, the blinders of traditional authority and the fetters of traditional political power had largely been broken, and Europe was on a new equilibrium path, this one a course of accelerating production of useful and reliable knowledge.

Other Eurasian countries eagerly copied and adopted discrete elements of European technology, from banking to canons, railroads to drilled infantry. However, until the twentieth century, most did not copy the core of Europe's knowledge-generating machinery: discarding traditional religious and political authority; adopting pluralist and secular government; and integrating scientific and commercial social networks. Non-Europeans thus found themselves overwhelmed despite their best efforts to copy and adapt, as European technology continually vaulted forward and next-generation production and military methods easily overcame lagging non-European efforts.

Today, the rest are indeed catching up. Not because differences are contingent and shifting, and not because Europe has turned its back on its virtues. Rather, non-European societies have finally figured out how to escape, without abandoning, their traditional authorities and cultural constraints, and are seeking to have their universities, factories, and R&D labs compete with those of Europe (and Europe's offshoots). The question that lies ahead is whether Europeans will welcome this now convergent path, or continue to insist on essential differences that will lead to a "clash of civilizations." To this one could also add the question: Why are Europeans (and their offshoot societies) so attached to the idea of sustained European differences, and why do they find it so hard to comprehend the reasons for their own success?

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