

## *Global Catastrophes and Trends: The Next Fifty Years*

by Vaclav Smil

Cambridge, MA: The MIT Press, 2008

ISBN 978-0-262-19586-7

\$29.95, 307 pp.

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“Sometimes just one inch ahead is darkness” is a popular saying. It is not a saying the great French mathematician and philosopher Marquis de Condorcet would have subscribed to. “If man is able to predict, with almost complete assurance, those phenomena whose laws he understands, ... he can, using the experience of the past, predict the future with a high probability...” Between these two antipodal views of the future, Vaclav Smil strikes, as it were, a middle ground:

“... this is not a book of forecast. I do not make a single claim that by a certain date a particular event will take place, or a given trend will peak or end. Nor is this a volume of scenarios... the book is simply a multifaceted attempt to identify major factors that will shape the global future and to evaluate their probabilities and potential impact” (Smil 2008: viii).

In the opinion of this writer, this book deserves more than a standard review. Therefore I have decided to offer both a critique and commentary of this work. I hope to encourage others to read this interesting and important work.

### **Conceptual approach**

The author distinguishes between *man-made* and *natural* disasters. In the former he includes violent conflicts—wars such as terrorism (“the poor man’s war”), internal armed conflicts, and revolutions. Smil’s particular concern is with what he calls *transformational* wars and revolutions, that is, those that bring about major societal transformations, such as the large-scale redrawing of state boundaries. The First and Second World Wars, the French Revolution of 1789, and the Russian Revolutions of 1917, as well as the American Civil War, are cases in point. Among natural discontinuities he places *geotectonic* occurrences like extraterrestrial bodies, mega-volcanic eruptions, earthquakes, and *pathogenic* viral outbreaks such as influenza pandemics.

Of the two categories of catastrophes, man-made catastrophes are by far the more devastating ones. “While trying to assess the probabilities of recurrent natural catastrophes and catastrophic illnesses, we must remember that the historical record is unequivocal: these

events, even when combined, did not claim as many lives and have not changed the course of world history as much as the deliberate fatal discontinuities, [i.e.,] man-made death” (p. 49). Let us remind ourselves that the human toll of man-made events such as the First and Second World Wars and the Russian and Chinese Communist revolutions ran not into the hundreds of thousands but into the tens of millions. Besides the heavy human toll and material destruction, they had profound social implications. They were, in Smil’s terms, *transformational*.

Against man-made catastrophes, natural ones come a distant second. Only the influenza pandemic of 1918–1919, which caused roughly 50 million deaths globally, matches the devastation of wars and revolutions. And one should not forget the aftermath of violent conflict—impoverishment, undernourishment, outright mass famines, and the breakdown of public services. Even HIV/AIDS infections, with a rate of incidence as high 20 per cent in some countries of Sub-Saharan Africa, have failed, at least so far, to produce major social effects. The global death toll from AIDS of about 2.8 million people in 2000 was less than mortality due to diarrhea and tuberculosis (p. 40). Notwithstanding their devastating effects on humanity, none of these natural threats have changed or are likely to change the course of history, opines Smil.

A distinction is also made by Smil between *unfolding trends* and *discontinuities*. This is an important, I would say, fundamental distinction, for it has implications for the way we conceptualize the future, its propelling forces, and the methodological approaches through which we would explore it. The prevailing approach to forecasting the future has been through the first phenomenon, *unfolding trends*. Discontinuities, ruptures, and breakdowns have been given lesser consideration, at least in pragmatic types of forecasts.

As to unfolding trends in the world of nature, he examines the energy transition from non-renewable sources, such as oil and gas, to renewable ones, such as nuclear and solar. Unlike many scientists, Smil is less alarmist about the prospect of the world exhausting its non-renewable sources of energy. He counts on human ingenuity to cope with possible shortages through such mechanisms as substitutes, pricing policies, and technical innovation (p. 78). He is less confident in the full-scale application of nuclear and solar sources of energy as substitutes for non-renewable energy sources because of technological constraints and the high risks sometimes involved in such alternatives. He cites the Chernobyl mishap in Ukraine as an example. Much of the push for switching from fossil to non-fossil fuels is prompted by the heated debate on climate change. On that issue he is deliberately pragmatic: “... we still cannot quantify its magnitude and impact with high confidence” (p. 91).

One other feature concerning natural and man-made events is the author’s interest in *global* events, i.e., events that have large-scale fallouts and far-reaching global consequences, even though they may have originated locally.

The two chapters that constitute the core of the book, and are likely to elicit readers’ greatest interest, are “Environmental changes” and the “Emerging New Political Order.” I decided to not comment on the former as I have no expertise in the field, and instead concentrate on the latter, in which I feel more comfortable on the account of my knowledge in demography, economics, and political science, in addition to my personal interest in history and exposure to various cultures.

### **Emerging new political order**

In the chapter “New political order,” Smil assesses the prospects for what today are seen as the major players in world affairs: Europe, the US, Russia, China, and Japan. In

my presentation I add India as an emerging new world power, even though Smil does not think it currently has that status.

**Europe's place.** The author paints a rather disquieting picture of Europe's standing in the world power constellation. While one may quarrel about the precise point in time when the decline of Europe set in, most historians would likely agree that it began with the First World War, during which virtually all European countries engaged in a fratricidal war, ending a long period of relative peace. The Second World War sealed the fate of the continent, and the rest is well known. The creation of the European Union is no doubt an event of historical proportions, whereby cooperation has superseded historical rivalries. But this has not made Europe politically or militarily strong. It has been said that the European Union is a "maze," too unwieldy to ever behave as a state, or a coherent actor, in the international arena. Some of the factors underlying the weaknesses of Western Europe are familiar to demographers. Foremost among them are: fertility below the generational renewal level, ageing populations, and actual or potential population implosion. But the biggest threat to Western European national identity and social cohesion, in the circumstance where the native population is not reproducing itself, is massive immigration, particularly of peoples with different cultural and political aspirations. "Given the continent's record, such an influx (of immigrants) would doom any chances for effective assimilation" (p. 100). Smil singles out in particular religious Muslim immigration as a civilization quasi irreconcilable with the secularism of host countries, for instance. I agree, but with one qualification. Each epoch in history has its underdogs. And it is fashionable nowadays to single out Muslims for *tous les péchés du monde*. Europe is alone to blame for its problems.

On the economic front, however, the European Union has much to celebrate. It has become prosperous to the point of becoming opulent, so much so that it is the destination of millions of fortune seekers from the four corners of the globe. Regardless, on a global scale its economy is on a course of steady decline, as evidenced by the fact that its GDP of 40 per cent in 1900 fell to 25 per cent in 2000, and "its share of global economic product may be as low as 10 per cent by 2050" (p. 95). Western Europeans derive much pride from their alleged "superior moral standards," but that is also questionable. Millions of foreign workers are marginalized and exploited. Many are illegal without really being illegal, as authorities turn a blind eye on their status.

The biggest weakness of the European Union, in the assessment of this reviewer, is the lack of spiritual auto-defense to preserve the integrity of its identity. Its very existence as a civilization is in question, let alone its role in the global political and economic arenas. As Smil puts it: "An entity so preoccupied with its own makeup, so unclear about its eventual mission, and so imperiled about its population foundations cannot be a candidate for global leadership" (p. 102). No less consequential, in my opinion, is that the European political and intellectual elite, in its quest to create some new transnational societies (states) under the guise of multiculturalism, is failing its own peoples, leaving them spiritually defenseless.

**The United States' retreat.** While America fares better than Europe, according to various measurement standards, in the author's words it is "in retreat" on many fronts, the stakes being even higher than Europe's. The author identifies many weaknesses, including a trade deficit, budget deficit, and the loss of key manufacturers. Its fertility rate remains slightly higher than Europe's, just at the replacement level, owing to persisting religiosity and lingering family values, and even more so to a high birth rate among Hispanic immigrants. But immigration to America has proven unstoppable.

Though there are some notable differences in the degree, America, much like Western Europe, is in the same boat. Unlike the author, this reviewer likes to talk about Western Civilization (including the Western offshoot countries of Canada, Australia, and New Zealand). The US has shown the limits of its military might. The current escalations of warfare from one place to another remind me of the brave but dispirited Roman General Stilicho running from one corner of the decaying Roman Empire to another to quell revolt, with the aim of saving its integrity.

Unlike the “rest” of the world (90 per cent of humanity), which holds steadfastly to its various national identities, countries of the Western civilization—USA, Western Europe, and its overseas attendants—are, as noted, in a state of self-denial; they have turned back to their history in favour of some unproven novel political constructs, that is, utopian projects of *transnational* states. None of this bodes well for the future of Western civilization.

**Russia’s way.** To many, Russia remains enigmatic and unpredictable. Who, indeed, would have predicted centuries back that a small isolated Muscovite principality on the outer confines of Europe and Asia, would rise from three centuries of oppressive Mongol rule to become the world’s largest empire, stretching at any one point or another in its history eastward to Vladivostok (and once to San Francisco) and westward to Berlin, the heart of Europe. How is it that what the well known Russian political philosopher Danilevsky qualified as the “sick and enfeebled colossus” was able to achieve an empire of such a size that would survive all the other empires of modern European history? On the other hand, who could have predicted that a small bunch of radical conspirators, the Bolsheviks, would topple down four centuries of entrenched Russian Imperialism, the Romanov dynasty, and hold this expansive multinational empire in an iron grip for 75 long years? Finally, very few, if any, would have predicted the sudden collapse of the totalitarian Soviet Union, and that the nations therein, which almost lost their national identities, would rise out of the ashes? So it is only fitting for Smil to title the section devoted to Russia’s future “Russia’s way.”

The author provides a brief but enlightening outline of Russian history, speaking to precisely those twists and turns I allude to above, and then he ponders the state of affairs in Russia since the collapse of the Soviet Union. The transition to civil society and to a free-market economy has proven to be painful, punctuated by many resounding failures. With the arrival of Putin, some order and stability has been brought to the country, but at the expense of democracy. Russia is on its way to recovering economically and militarily. Its economy is rebounding, owing to its huge reserves of oil and gas, on which Western Europe is largely dependent. Its military is being modernized, with new sophisticated weaponry being added to its already existing huge conventional and nuclear arsenal. After a quasi-retreat from world affairs, Russia is back on the international diplomatic scene with force. All the above factors “add up to an undeniable reassertion of the country’s global primacy” (p. 123).

“But are these natural, economic, and intellectual advantages enough to outweigh the country’s many problems and elevate it once again to superpower status? A closer look indicates that the prospects for a strong and lasting comeback is not encouraging” (p. 121). Smil elaborates at length on demography, much of it already known to demographers. He points out the dismal performance on this front. The poor health and social malaise to which Russian society has succumbed has “... one common denominator, the chronic epidemic of alcoholism” (p. 127). As for its wealth—huge, unsurpassed natural wealth—it conceals some fundamental weaknesses. One of them is that Russia relies on

the export of raw materials, more specifically oil and gas, that are subject to the vagaries of economic fluctuations.

There are many problems in Russia that one could argue will impact her future—problems that seemingly defy change, whether rooted in history or geography. Smil glosses over them, but they might have deserved a closer look, space permitted. So I take the liberty to further elaborate on a few points. For instance, it will take more than one generation to recover from the trauma caused by the oppressive totalitarian Communist regime. In the words of the Russian philosopher Fedotov, “Russia lived through one of the most gruesome stages of her Golgotha. Millions of corpses mark every turn of the dictator’s steering wheel” (p. 279). Furthermore, Russia is [also] still in search of its national identity, oscillating between Europe and Asia, while Russian nationalism reacts anxiously to its multinational reality.

There is the perennial tension between the center and the periphery that has plagued Russia historically. Moreover, since the collapse of Soviet Union the so-called “near abroad” remains unsettling and potentially explosive, as Putin’s Russia tries to resurrect its decaying empire. Russia’s eastern neighbor, China, is a rapidly rising world power, economically and militarily, and may present Russia with its biggest challenge in the long run. Its Southern flank, Caucasus, and central Asian Republics are under the spell of rising militant Islamism. Yet, if I may indulge in some speculation, Russia may survive Western Europe, much like the Byzantine empire outlived the Western Roman Empire; however on a much shorter time scale. On the other hand, as much as the prospect of a united Europe with Russia and Eastern Europe is remote, its realization would ensure Europe’s survival. This, however, under conditions that Russia gives up its imperialistic ambitions, adheres to Western democratic values, and not makes Western Europe hostage to its oil and gas supply. Though depleted, Russia and Ukraine would bring a still formidable level of human capital and a huge market, while injecting a sense of vitality into today’s apathetic Western spirit.

**Japan’s decline.** Japan’s fortune is on the decline, says Smil, and one can hardly disagree with him. Japan is unique amongst countries for the magnitude of its ageing population and its low fertility rate. As the author points out, Japan’s infrastructure is getting older and in need of repair, its economic system lacks the flexibility to absorb shocks, and its management practices are rigid. Japan’s remarkable rise after the war, reaching its pinnacle within two generations and becoming the world’s second economic power, owes much to the genius of its people, their ingenuity, work ethic, and the way it managed to blend tradition with modernity. That said, in this reviewer’s opinion it is a transient phenomenon. Neither its geography, natural resources, or demography (i.e., its population size) can sustain the economic and military growth required to rival other players in world affairs—specifically, the two rising Asian giants, China and India. Japan for these reasons is destined to remain a middle world power. It is likely, however, to keep playing a pivotal role in the Far East, in the opinion of this reviewer. Unlike Western nations and their overseas extensions, Japan has so far resisted the temptation to resort to immigration in order to fill a shortage of manpower. Instead they are relying, and so far successfully, on automation. Much like South Korea, they are choosing, and probably wisely, to preserve their national identity rather than engage in nation-building experimentations of the Western kind. But, in the view of this reviewer, sooner or later they will have to make a choice between immigration and a more satisfactory allocation of national resources—between *production* and *reproduction*—so as to bring their fertility to the generational replacement level.

**Islam's Choice.** The choice of this section's subtitle leaves the matter in suspense. What is sure is that "because the Muslim world is too heterogeneous..., the chances of seeing such an extensive, coherent, and globally powerful and economic entity before 2050 are vanishingly small" (p. 110). The author identifies a number of reasons for the backwardness and, in more recent years, the militancy of Islam. Unlike some students of Islam, Smil does not think that the Koran is the explanation: "Islam's guiding texts do not give us ... any unequivocal guidance regarding aggression and compassion" (p. 112). It is not unlike the Old Testament and the Torah. Nevertheless, according to Smil, events on the ground give a number of reasons to be wary about the way Islam, and the countries embracing its credo in its conservative cast, may go in the future. Islamic law, with its archaic way of dealing with individual and public affairs (crime, education, finance), "pre-empts the adoption of laws that form the foundation of modern states" (p. 115). Smil deplores the modernization deficit, conspicuous in many domains, including education and creative work, social and economic innovation. Moreover, Muslim militancy leaves little room for any interfaith dialogue. "It rejects functional fusion of an ancient religious tradition with the needs of the modern world" (p. 113). Of interest to demographers is Smil's view of detrimental ramifications regarding the "tardiness in completing the demographic transition" (p. 118). The rising generations of youths in a state of backwardness may lead to the embrace of radicalism, both internally and externally.

Much of that is true enough, but some of it seems one-sided, in this reviewer's opinion. There are other causes originating outside the Muslim world that fuel its radicalism. For instance, it may be argued that it is Muslim countries that are being occupied and not *vice versa*. Yet the grand alliance between the Western world and the Muslim world as two complementary economic entities, with Israel playing the middle man, may not just be a utopia or wishful thinking. The historical, religious, and economic divides of these three great civilizations can be bridged hopefully, and turned into a unifying principle.

**China's rise.** China's rise to world power is given a great deal of attention by Smil, and deservedly so. But here I have to keep it short. My role is not to preempt but to encourage the reading of this highly enlightening book. After a protracted political convulsion and civil war, as well as Mao Zedong's eccentric follies—cultural revolution, collectivization, all of which cost China millions of victims—China has reached a turning point. Smil identifies the reasons for this turnaround. Though under the continued vigilant eye of the Party, China's economy has been given relatively free rein to grow, and to grow fast. Steering toward "economic pragmatism and reintegration with the world economy" (p. 129) was a major factor helping the Chinese economy take off and put it on a path to sustained rapid growth. Western capitalists responded in kind. While greatly benefiting from the influx of massive foreign capital, China has made good use of its almost inexhaustible reserves of a docile workforce. What a remarkable symbiosis: "a Communist government guaranteeing a docile workforce without rights and often in military camp conditions in Western-financed factories so that multinational companies can expand their profits, increase the Western trade deficit, and shrink non-Asian manufacturing enterprise" (p. 130). (But didn't Lenin claim that capitalists are ready to buy anything, including the rope with which to hang themselves?) With all the Marxist sloganeering, China's leadership is pursuing a nationalistic policy, managing to infuse in its people a sense of national pride.

But the author makes no secret of the many roadblocks on China's way to economic and social greatness. On the demographic front, the one-child policy and the popular

preference for boys have created social and economic problems, including rapid population aging and a gender imbalance, as well as a “shockingly aberrant sex ratio at birth” (p. 133). China’s economic rise has gone hand in hand with wide income inequalities, “massive urban underclass of uncounted destitute migrants” (p.135) that are likely to incite social discontent. Moreover, China is becoming the most polluted country in its drive for industrialization at any cost. A likely future shortage of fresh water supply, energy, and farmland (only a modicum of which is available to sustain such a huge population at 0.1 ha/capita) are only a few of the problems China stands to face (p. 136–8). The sustainability of Chinese economic growth remains questionable, because China’s growth continues at the expense of low-cost labour and environmental deterioration. Last but not least is the “critically important power of ideas” (p. 140) that could inspire the world. Intellectual and artistic creativity are being suffocated under the grip of an ideologically hostile carcass. China’s threat to its neighbors is omnipresent, notwithstanding some reassuring declarations.

**India: the missing nation among the great.** In the book’s overview of the destiny of current and emerging world powers, India is only tangentially touched upon: “India will definitely be part of the global rearrangement of world order.” But the author does not give it a preeminent place among the other countries being reviewed. This reviewer could hardly disagree. It is true that India lags behind China in terms of economics, human capital, infrastructure, industrialization, foreign capital, export, and military power. Internally, too, India is more vulnerable, given its ethnic and religious diversity, and its adherence to a democratic way of dealing with diversity. The fallouts of its diversity could become even more manifest in the future. The syndrome of nationhood has historically been cyclical: lying dormant for centuries and then waking up with a vengeance. Unlike China’s ruthless suppression of any manifestation of nationhood among its minorities (representing only 5 per cent of the total population—hardly any danger to the unity of the country) India tries to accommodate local sensitivities within a confederate framework of the state. But lagging behind China on a number of scores should not discount India’s becoming a preeminent player in world affairs in the next 50 years, especially in the Asian body politic. In view of some commentators, India’s role in the emerging international system is based not only on its military might and economic performance, but on its ability to build new coalitions in a world of complex interdependency.

### **What is the value of predictions? Uncertainties, probabilities**

After having mapped unfolding trends and events that are likely to cause discontinuities, Smil appropriately addresses the question of *uncertainty, probability, and risk taking evaluation* in the book’s last section. He distances himself, as already alluded, from routine forecasting, “thousand of forecasts ... are issued ... only to be superseded by equally pointless exercises days or weeks after” (p. 247). He takes a dim view of projections of the scenario type, arguing that “their limited utility springs from their inherently limited scope” (p. 247). In support of his contentions he lists a number of failed projections of this kind made in a variety of fields, including natural, social, and political, demonstrating their futility. Some of the projections have in fact done more harm than good. (He cites Chapman and Harris (2002), “who argued that the disproportionate reaction to 9/11 was as damaging as the direct destruction in lives and property” (p. 231)). The problem with his reasoning is that by the same logic and on the same grounds, the very book *Global*

*Catastrophes and Trends: The Next Fifty Years* begs to be dismissed as well. *Predictability* is inherent in any forecasting, whether this is implicitly or explicitly acknowledged or not, notwithstanding all the cautions and caveats stated by its makers. Much of what he says about the attempts to forecast the future are not things an even remotely knowledgeable reader on forecasting would disagree with when judged at *face value*.

However, when we look closer and mull over their relevance, we arrive at a different appraisal. Many conventional and less conventional forecasts (dismissed by him), including the forward-looking book under review, take on an entirely different meaning when they are given a more incisive reading. The key here is the departure from the mainstream view of forecasting by shifting the emphasis from the *predictability* paradigm to the *impact* paradigm, from forecast as *discovering* the future to forecast as *creating* it. If we cannot *predict* the future we can *make* and *remake* it. Forecasting thus acquires the value of a tool to *manage* the future. It is easy to recognize that this reviewer's stance towards the future—regarding prospects and events which loom on the horizon—is distinctly proactive and not merely passive. When viewed against the background of such considerations, brought up by the author as *risk minimizers*, *relative fears*, and *rational attitudes*, the forward-looking accounts do become useful tools for managing the future. So it is also with specific cases of possible catastrophes, potentially harmful trends, and the need to take steps to prevent them from occurring or at least to minimize their consequences or promote those public policies that would enhance the benefits. "I always find myself arguing that we should act as risk minimizers, as no-regrets decision makers who justify our action by benefits that would accrue even if the original risk assessments were partially successful, or even a complete failure" (p. 237). That is *precisely* the point. Viewed in that sense, the book commends itself as *futures studies* to researchers and policymakers in a variety of fields.

**The weight of history: Does history offer any guidance for the future conduct of nations?** Engaging as it is, the most controversial part of the book, I feel, is the very last part, which addressed the relevance of history in making inferences about the future. The author is dismissive of history as a guide to the future. He is "deliberately agnostic" (p. 251) as to "civilization's fortune" (p. 251). He has a "strong personal distaste" (p. 219) for grand historical outlines of civilizations. One can only sympathize with the author, but not all the way. Does history repeat itself? Can history teach anything? Can it be a guide for the future? Is it linear or cyclical? There is a plethora of shorthand descriptions and aphorisms about its utility or lack thereof, e.g., "Those who cannot remember the past are condemned to repeat it" and "The only lesson history has taught is that man has not yet learned anything from history." I prefer a more pragmatic view of history. Denying its relevance is tantamount to denying any past experience. One does not have to choose between Hegel's view of history as a logical dialectic, self-perpetuating development, and Schopenhauer's view of a chaotic and senseless world.

Clearly some of the grand outlines of history have led us astray. A case in point is *historical materialism*. Its fundamental theoretical postulates are highly wanting—the reduction of complex human relations to *modes of production* and the *ineluctability* of communism as the final stage of humanity's evolution. Ironically, with all its pretensions to be a *scientific law* it had to be imposed by crude force. The much-professed internationalism becomes window-dressing for narrow nationalistic pursuits. The gulf between doctrine and practice, between what was professed and what was actually fulfilled, has been wide (Djilas 1969).

But there are historical outlines deserving of our attention. Let me focus first on Spengler's morphology of world history, *Der Untergang des Abendlandes*. Something which Smil casts aside as "merely irrelevant" I find thought-provoking, particularly in regards to Europe's destiny. One may question, as it has been, Spengler's deterministic cyclical naturalistic interpretation of world history. (I personally am particularly bothered that it leaves no place for human volition—individual and collective actions.) However, seen from the present vantage of Western civilization, and in the context of this discussion, I am less interested in the *descriptive* truthfulness of Spengler's interpretation of history than in the *message* it sends to the contemporary Western man. Nor did Spengler alone espouse a cyclical view of history. Another famous historian, Arnold Toynbee, also did. Unlike Spengler's, Toynbee's approach to the study of history is less deterministic, more ideational and sociological than naturalistic. The key to the explanation of the rise and fall of civilizations is to be found, according to him, in the degree to which a society's response measures up to challenges, internal and external. And in this search for historical relevance, how can we overlook the great book by Edward Gibbons on the rise and fall of the Roman Empire as a reminder of what can happen to its successor, Western civilization.

History has recorded many nations and civilizations, rising and falling, while humanity as a global entity gravitates to ever higher stages of ascendance. (Toynbee documented 23 civilizations that have vanished.) There are parallels, some may find them disturbing, between the later phase of the Roman Empire and the Western world at its current stage. Symptomatic in this regard may be the devaluation of family, childlessness, and civil laxity. Also we may remark on the transformation of Roman society and state into one we would today call "multicultural" or "cosmopolitan," and the formation of an internal proletariat born out of a massive inflow of intruders from Germanic and Slavic lands (also imported slaves from the East). The advent of *universalism*, under the banner of the Christian universal church in the Roman Empire at its declining phase, bears some resemblance to today's democracy, bent on building a transnational society. All this invites us to ponder, as we contemplate the present state of Western civilization and its future. To recall Toynbee's famous words, "Civilizations die from suicide, not by murder".

Professor Smil believes in the *continuity of history* (but in his rather peculiar way he illustrates the point by reproducing the picture of the splendid architecture of the Basilica of Santa Sabina erected just a few years after Rome was sacked by the Goths). And he continues to reinforce his point by telling us that "... such terms as *demise* or *collapse* or *end* are often merely categories of our making, and [...] *catastrophe and ending are also opportunities of beginnings*" (p. 253; my emphasis). On this optimistic note, the book ends.

Well said, indeed. But it would have been hardly any consolation for the Romans seeing their great civilization collapse, or for the Bishop of Hippo, later to become Saint Augustine, who grieved over the destruction of his church by the Vandals. (My many visits to Rome, strolling through the preserved ruins of the Eternal City, inspire sadness and the question: what went so terribly wrong?!) The difference between the Bishop of Hippo and the people of that time and the modern Westerner is that the former found salvation in God's gospel and the latter lacks any spiritual anchorage; he floats in the spiritual emptiness of post-modernism. What followed the fall of Roman civilization was what some history books call the *Middle Ages* and others the *Dark Ages*. It might have been a long but redeeming period, a historical period of regeneration, according to Arnold Toynbee. But the fact remains that it was a protracted setback to technological progress,

an age of lawlessness, brigandage, obscurantism. It took a long time to reconnect with Greek Antiquity, philosophy, and the arts, and with Roman jurisprudence. The *Renaissance* gave Western civilization new élan.

But now, again, we are faced with the unknown. Even in the worst of Smil's scenarios of the decay of civilization, "we leave behind a better preserved than the Assyrian Empire short-lived capital of clay..." (p. 1). That is of no consolation, either. The statement echoes the words of Nobel Prize winner Günter Grass in his *Headbirths*, referring to the dying-out of Germans (and, by implication, of Europeans): "there is a certain grandeur in stepping out of history, in forgoing progeny, turning into a mere object of study for younger nations..., displayed in vitrines... and museums" (1982: 5). But belying Grass' statement is irony; in Smil's, on the other hand, it comes out as if it were a redeeming virtue. One can also detect in his writings some inconsistencies on this score. For my part, reading the book, I remain convinced that Professor Smil, with all his avowed agnosticism, does care about the future of European civilization, as of any other civilization.

All the above controversy notwithstanding, the book is a fascinating read. It is well researched. The author is comfortable in the *human* as well as in the *natural* sciences. This in itself is quite a feat in an era of narrow specialization. It is written in a language that will appeal to both specialists and laymen. But above all, it leaves us with the feeling that although we may not have the mastery of the future, neither are we simple onlookers at what occurs around us. With proper knowledge and determination, we may be able to manage the future, and this book invites us to do just that.

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