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History As Science and Science in History

Historians have been the target of many jibes. According to one, the only thing they learn from history is that they never learn from history. This is true, of course, of non-historians as well. Another jibe—history never repeats itself, only historians repeat one another—seems to deprive historians of the right to claim that what they say is at least a reasoned discourse. Such a discourse was originally meant by writing history, that is, giving a careful recital of past events.

But even if historians did far better than repeat one another, their discourse would not necessarily qualify today as something really well-reasoned. For such a discourse has now been largely restricted to what science stands for. This is certainly the case in the Anglo-Saxon ambiance. Even the German word, *Wissenschaft*, which should cover all systematically reasoned inquiry, finds its broad meaning steadily narrowed to the exact and empirical sciences. Chiefly responsible for this semantic process is the stunning effectiveness which exact science displays in ever widening forms.

The admiration which scientists enjoy as a result has for some time been looked upon by non-scientists with envy. To retain respectability, more and more philosophers began to write as if philosophy could be handled in the manner of science. In the process—it is enough to think of logical positivists—wisdom and its love disappeared from much of philosophical discourse. Again, in order to be part of the scientific world, cultivators of psychology abandoned their claim to the human psyche taken for soul, properly so-called, as they filled their learned journals with statistics, measurements of behavior, and even with mathematical formulas. In trying to become scientific, many sociologists became mere statisticians. Worse, they readily assisted those who set themselves up as the chief global engineers of society.

To what extremes this aping of the properly scientific method carried the study of history can be measured from the emergence of the word "cliometrics." It is the study of history using advanced methods of

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data processing and analysis. Cliometrics ties Clio, the Muse of History, to the art of measuring or computing. This might not overly upset her, but one wonders whether she would have been amused by a paper read during a seminar which Professor L. Benson of the University of Pennsylvania held in the Department of History at Princeton University on May 11, 1967. In the paper, "The Quantification of History," Professor Benson claimed that only by feeding into a computer the full voting record of all members of the Congress between 1830 and 1859 shall we learn the true causes of the Civil War. This claim could, of course, sway only those ready to trade common sense for the veneer of science.

Others expected some truly recondite information to come from cliometrics. Tellingly, a huge scientific conference, the 1965 annual meeting of the American Association for the Advancement of Science, was chosen as the setting for a claim which, if reliable, would have turned political science into one of the exact sciences. According to that claim, the ups and downs of Soviet-American relations obeyed Pontrjagin's Principle, a mathematical function useful in calculating parts of rocket trajectories as subject to external influences. In the 60s, when Soviet rocketry was the envy of the scientific and political world, that claim must have particularly appealed to not a few. They were the ones who viewed the Soviet Union as a permanent feature on the global scene and sympathized with the Marxist tenet that history followed ironclad rules of economics. The fact that representations of radically opposed schools of economics have been awarded Nobel Prizes should be enough of a warning about what to think of the scientific status of that most eagerly pursued field of "scientific" inquiry.

At any rate, in thinking about history in scientifically deterministic categories, Marxists merely followed the social engineers of the Enlightenment. They all tried to confine history to Procrustean beds of illusory categories. Such beds were fabricated by Turgot, Condorcet, and Saint-Simon, the new "scientific" theoreticians of the development of human thought. They tried to show that the religious, metaphysical, and empirical or positive—that is, scientific—phases of human thought followed one another in an inevitable sequence. Comte's law of three states, a borrowing from Saint-Simon, was received in France for the rest of the 19th century as a genuinely scientific key to the genesis of ideas and of the evolution of society.

This scientistic thinking about history was crystallized in Comte's famous dictum, "*science, d'où prévoyance, prévoyance d'où action.*"[1] Newtonian science was thereby declared to be the key to the understanding of human history and the development of society. Once more a declaration was not a demonstration. Comte merely demonstrated to be in the line of *philosophes*, all-too-eager to abuse Newtonian science for purposes it was never meant to serve. There was not a line in Newton's writings that would have supported Baron d'Holbach, a *philosophe* of lesser rank, in his declaration in 1771 that "all the errors of men were the errors of physics."[2] Better-grade *philosophes* were not reluctant to make the same disreputable claim. D'Holbach's startling phrase recurs almost verbatim in Condorcet's diagnosis of the factor that holds back human progress: "All errors in politics, in morals are based on philosophical errors which in turn are tied to errors in physics."[3] A feat of physics, Laplace's demonstration of the stability of the solar system supported Condorcet's forecast of an unlimited progress for the human race. One wonders whether Bertrand Russell realized the extent to which he was indebted to those

philosophes when at one point he looked confidently forward, to recall a recollection of his, to a "mathematics of human behavior as precise as the mathematics of machines."[4]

Such precision implied the full predictability of human behavior and of history. The hapless short-range performance of the futurologists of the 1950s and 1960s should be enough of a warning about the merits of writing an exact history of the future. But even the past posed insurmountable challenges to those who tried to present it in a "scientific" way. The fatefully unforeseeable turns of human history demanded a more pervasive listing of causes than the ones typified by the possible difference of the length of Cleopatra's nose.

Hume's *History of England* could appear "scientific" only for those who let themselves be taken in by his two sleights of hand. One is a superficial though stylish account of the advent of scientific thinking through the genius of Newton. Few realized then, as now, that the *Principia* was a closed book for Hume. The other was a convenient disregard, or at least a heavy slighting, of religious motivations that played a part in the shaping of English history and even in the rise of Newtonian science.

Hume drew his inspiration for writing a "scientific" history of England after consorting with *philosophes*, whose undisputed leader, Voltaire, had already tried to put French history on a "scientific" basis. This meant no more than obsequious references to Newton.[5] In Voltaire's case too, scientific largely meant secularistic. *Le Siècle de Louis XIV*, Voltaire's best historical treatise, should seem most unscientific against the standards of historical accuracy as set by Mabillon and his Maurist confrères. Nor did it follow from Voltaire's portrayal of the century of Louis XIV that the reign of Louis XV should last so long as to make very difficult the reform of the monarchy during Louis XVI, a well-meaning but indecisive king.

Nor could Voltaire, or anyone else for that matter, claim that Louis XVI had no choice but to shun decisiveness. For if Louis XVI, a physically robust and mentally normal being, could be taken for a mere product of strictly deterministic causes, Voltaire's evaluation of the monarchy also had to be seen as a foregone conclusion and not the fruit of free deliberations. Indeed, the question of freedom remained for Voltaire a disquieting topic. This is why he also felt disturbed by the perspective of purposeful action inconceivable without the freedom of the will. Not surprisingly, Voltaire did his best in his *Essai sur les moeurs* to discredit Bossuet's *Histoire universelle*, the last classic statement of the view of history that had been set forth first in Augustine's *On the City of God.* What must have irked Voltaire most about Bossuet's book was its grand conclusion, a categorical dismissal of chance as an explanation of history or of anything else: "God reigns over every nation. Let us no longer speak of coincidence or fortune; or let us use these words only to cover our ignorance."[6]

A providential view of history, so Voltaire argued, could not qualify as "scientific." But was Voltaire's science of history any more scientific by his roundabout recourse to chance as an explanation? Of course, in Voltaire's time it was still "unphilosophical" to fall back on chance, though not unphilosophical or unscientific to make ample stylistic use of the term as long as one could cover up one's real intentions. Helvetius, a fellow *philosophe*, provided a revealing instance of that stratagem as he spoke of the rise of geniuses as a fortuitous process. In Helvetius' *De l'homme*, a footnote in which he warned the reader against taking chance for more than a mere word, let alone for a cause properly so called, balances copious references to the role of

chance in that rise.[7] But once divine guidance and human freedom were conveniently ignored, hollow references to chance remained the only acceptable technique for suggesting that history was not inevitable. This far from intellectually honest technique alone could save the determinist historian from admitting that he implied the inevitability of his own mental processes.

Such a predicament had to be greatly perplexing to prominent 19th-century historians, bent on assigning to historiography a status which was scientific in at least the sense of being scrupulously factual. Their motto was Ranke's injunction that the historian should render the past "*wie es eigentlich gewesen*,"[8] that is, exactly as it happened. Not all these "scientific" historians shared Ranke's view that if facts were taken care of, higher wisdom or Providence would readily show through history. But all shared faith in Progress, writ large. This faith quickly provided stimulus for a memorable formulation, by Thomas Henry Buckle, of scientific historiography. His complaint, "we find that while natural science has long been cultivated, historical science hardly yet exists," was introductory to his grand conclusion that "all events which surround us . . . are but different parts of a single scheme which is permeated by one glorious principle of universal and undeviating regularity."[9]

Any British historian who hoped in the 1850s to justify his scientific status with an eye on science and progress could certainly take inspiration from the Great Exhibition of 1851. Buckle's hopeful words, "The signs of the times are all around, and they who list may read. The handwriting is on the wall,"[10] may very well have been inspired by his reading of the editorial in the May 19, 1851 issue of *The Illustrated London Times* about the simultaneous opening, a week earlier, of that Exhibition and its housing, the Crystal Palace. The flood of illustrious visitors from all over the world, the Palace, the plethora of manufactured goods and new machinery suggested to the author of that editorial the reversal, once and for all, of the *mene tekel upharsin*, the most ominous handwriting ever to appear on the wall.[11]

And why not? It was, for instance, precisely around the middle of the 19th century that overland travel took on, with the sudden spread of railroads, a vastly new aspect. Had Lord Palmerston been called to form a new government not in 1842 but ten years later, his trip from Rome to London would not have taken thirty days, which was sufficient even in Imperial Roman times to cover the same distance. Almost a century later, in 1931 Winston Churchill still found this fact worth recalling as he tried his hand on futurology. Once more the result was a very mixed bag. He forecast not only the coming of fusion energy, but also, perhaps half facetiously, the eventual manufacturing of chicken legs and breasts without hatching entire chickens.[12]

Around 1900, travel from Rome to London took less than two days and could be done in the luxurious comfort of Pullman sleepers. People, so Stefan Zweig reminisced, took belief in progress with "the force of religion." Countless "miracles" were on hand, all brought about "by the archangel of progress." Moreover, "the possibility of a relapse into a new barbarity, such as, for instance, war between the nations of Europe, seemed as remote as demons or witches."[13]

Suddenly the demons of barbarity were back in full force and with a fury previously unimaginable. Machine guns could cause in a single morning as many casualties as the atomic bomb was to take in a split second. Synthetic nitric acid, invented by Fritz Haber, a future Nobel Laureate chemist, made it possible for Germany to prolong the war from four months to four years. The

same scientist engineered the chlorine gas attack at Ypres on April 22, 1915, that might have lead to the quick termination of the war had the attackers realized the magnitude of the devastation they brought about.

It looked as if all conspired to bury victors and vanquished alike under the ruins that, physically at least, were the making of that very science which had until then seemed to assure unlimited progress. Worse, science proved helpless against the onslaught of new epidemics. Science could but give the useless label "Spanish flu" to the plague that took more than two million to the grave in the wake of a war that forced the digging of more than twenty million graves. Had pessimism not been rampant, the two heavy volumes of Spengler's *Untergang des Abendlandes* would not have sold in a mere five years well over a million copies in half a dozen translations.

As always, some diehards refused to surrender. No reference to World War I was in sight when, in 1920, Bury published his *Idea of Progress* and dedicated it to the memory of such optimists as Condorcet, Comte, and Herbert Spencer. And why not? After all, their ideas were merely given a more scientific look as Bury declared that historiography is "science, not more and not less." The declaration was part of his inaugural lecture at Cambridge University in 1903.[14]

A "scientific" historian who could ignore World War I in such a non-scientific fashion must have had an unusual measure of detachment from reality, the realm of facts. With such a detachment, Bury might not have cared, had he lived to the end of World War II, to refer to the surrender which no less a pragmatist than H. G. Wells signalled by publishing in 1946 *The Mind at the End of Its Tether.* Certainly, Charles A. Beard did not refer to World War I, and much less to the Wall Street Crash of 1929, or to the rise of totalitarian regimes, as he wrote an introduction in 1931 to the American edition of Bury's work to help celebrate the "Century of Progress Exposition" in Chicago.

Yet, darker than the specter of global destruction was Bury's own admission that the idea of Progress, writ large, seemed to imply its own refutation. Did not that idea, Bury asked, owe its origin to a reasoning that aimed at disposing with the Christian dogma of finality? But, Bury asked again with commendable candor, "if we accept the reasonings on which the dogma of Progress is based, must we not carry them to their full conclusion? In escaping from the illusion of finality, is it legitimate to exempt that dogma itself?"[15]

In the absence of an epistemology capable of coping with this apparently total futility, some facts of cultural history appeared even more ominous. All cultures seemed to be subject, in Bury's own words, to the rule of "arrest, decadence, stagnation."[16] For the historian this could mean but a surrender to utter relativism, carefully dressed up as it could be.

Escape from that relativism could not be provided by more references to science as if they by themselves could assure "scientific" status to historiography. That status was no more than a variation of recourse to belief in progress. When that belief was defended by those who denied scientific status to history, the tables could readily be turned on them. Thus the Cambridge historian, Edward C. Carr, was right in claiming, in his Trevelyan memorial lecture (1961), that Karl Popper could not have it both ways. Either Popper was right in claiming that the Marxist view of history was wrong because there were no laws to history, or he was wrong in claiming that scientific progress could only be had in an open society. If progress did not imply some law or pattern across history, it was void of meaning.

Undoubtedly, Marxist systems were the

main target of Popper's declaration: "Wherever the freedom of thought, and of the communication of thought, is effectively protected by legal institutions and institutions ensuring the publicity of discussion, there will be scientific progress."[17] Carr replied: "This was written in 1942 or 1943, and was evidently inspired by the belief that the Western democracies, in virtue of their institutional arrangements, would remain in the van of scientific progress—a belief since dispelled, or severely qualified, by developments in the Soviet Union. Far from being a law, it was not even a valid generalization."[18] Developments in the Soviet Union, which Carr with his Marxist sympathies would not have thought possible (to say nothing of its demise), make it unnecessary to comment on Carr's dictum.

Around 1960 or so, a prophetic truth could seem to be attached to the claim which Joseph Needham had set forth in 1946 in his collection of essays, *History Is on Our Side*, that is, on the side of the Marxists.[19] Yet by then computers were in the making that anticipated what twenty years later entered the market as PC's. In fact, when the Soviet Union still seemed to be on a par with the United States with respect to military and industrial power, those in the know were aware of the fact that this parity was largely a matter of well-orchestrated propaganda. But propaganda could not be exposed with any effectiveness when at the same time liberal newspapers and university presses readily played second fiddle to tunes set by Marxist ideologues from well-endowed chairs in capitalist American universities.

In 1983, it took no crystal ball gazing to perceive the awesome potentialities of computers which only a year or so earlier had become available for any American desktop in the form of IBM PC's. But at that time not even every office in the Soviet Ministry of Defense had a computer—so remarked Chief of the Soviet General Staff, Marshal Nikolai Ogarkov, to a delegate, Leslie H. Gelb, of the State Department, who specialized in foreign affairs reporting.

To Mr. Gelb's utter astonishment, the Marshal, in the course of a reception in Moscow, took as irrelevant his question why the Soviet Union kept a great standing army if its intentions were purely defensive. According to Mr. Gelb, "Numbers of troops and weapons mean little, he [the Marshal] said. We cannot equal the quality of U.S. arms for a generation or two. Modern military power is based upon technology, and technology is based upon computers. In the U.S., he [the Marshal] continued, small children—even before they begin school—play with computers. Computers are everywhere in America . . . . And for reasons you know well, we cannot make computers widely available in our society."[20]

Against this extraordinary piece of information, a Reagan one-liner stands out as a beacon of insight into the role of science in history. The Soviet Union was still in place, the satellite countries still had no inkling about their imminent liberation, when Ronald Reagan spoke at Guild Hall in London, following his induction as an honorary member of the Order of the Garter. There, on June 11, 1989, he confidently predicted that "the microchip of David will vanquish the Goliath of totalitarianism." The truth of this brief phrase compares very favorably with lengthy chats about four freedoms from which so many were excluded for so long over so large stretches of the globe with the ready connivance of liberal chatterboxes interested in everything except liberty for all.

Their latter-day epigons have just announced the death of Star Wars research on the ground that there is no longer any intercontinental threat to the United States. They still have to get off the ground of pedestrian thinking about science. For just as there can

be no science of history which is, as exact science has to be, strictly predictive, there is no way of predicting the course which scientific discoveries will take in the near future, let alone in the distant future. This is why what is actually feasible, such as the Superconducting Supercollider, must be seized upon, no matter the cost. For while there is no intercontinental ballistic missile threat (at the moment) to the United States, science knows no bounds set by continents. A major scientific and technological breakthrough can occur at any time in lands very distant from the United States. The Supercollider may indeed reveal entirely new forces at work in nature, forces far stronger than the force that keeps the atomic nucleus together.[21]

Such are most realistic vistas against which the smug registerings of the "end of history" reveal their futility. Fukuyama's much touted book has that dubious saving grace which is its author's drastic insensitivity to what goes on in science and technology[22]—typical of an author whose hero is Hegel, who best revealed his intellectual insolence in his encyclopedia of the natural sciences.[23] Hegel failed to see the openendedness of the natural sciences as much as he failed to note forces at work in history other than the self-unfolding of the German race.

One may bemoan the overweening importance which scientific and technological breakthroughs play in modern history. One may deplore mankind's inability to break out from the hellish circle of manufacturing for the sake of more manufacturing. One may agonize over certain characteristics of man's pursuit of scientific and technological goals that evoke Captain Ahab's mad chase of the big white whale: "All my means are sane, my motive and my object mad."[24] The fact remains that history is made increasingly by science although one cannot write a "scientific" history, and not even a history of science along scientific lines. But history will remain a source of insight for those who want to learn from it instead of declaring it to be at its end, let alone predicting its likely future course.

But even to the history of the last one hundred years, so full of the impact of science on it, one can rightly apply the dictum almost two millennia old: "History is philosophy [drawn] from paradigms [examples]."[25] To draw its lessons one has to have better categories than the one offered by "paradigmizing" historians of science.[26] As Herbert Butterfield once noted, the gathering of genuine paradigms or lessons of history demands "imaginative sympathy." Animated by that sympathy, the historian "makes the past intelligible to the present. He translates its conditioning circumstances into terms which we today can understand. It is in this sense that history must always be written from the point of view of the present. It is in this sense that every age will have to write its history over again."[27]

Writing history again and again is not a re-writing of it, nor is it a sophisticated regurgitation of what had already been stated. John Henry Newman touched the nerve of the matter as he warned: "History is not a creed or catechism, it gives lessons rather than rules; still no one can mistake its general teaching . . . .Bold outlines and broad masses of colour rise out of the records of the past. They may be dim, they may be incomplete; but they are definite."[28] But a history with such instructiveness will resemble its Augustinian type on which Voltaire poured scorn for not being scientific. It is even less in favor today when cultural relativism runs amok through the history departments and deconstructs teachers as well as students.

The havoc—a quarter of a century long—wrought by the French Revolution had to come to secure a hearing for a relatively

brief revival of the Augustinian view of history. The revival had its Romantic ingredients, among them a nostalgia for some unduly idealized past ages, as was the case with Chateaubriand's *Génie du christianisme* (1801) and Schlegel's *Über die neuere Geschichte* (1811). But both authors could point at the colossal failure of the *philosophes* to remove genuinely religious perspectives from modern man's mind.

Since the dire lessons of World War II are rapidly fading, a far greater historical havoc may be necessary to return mankind to those perspectives. Such a havoc may be generated by the hope that science can nip in the bud the epidemic of AIDS and related diseases which now claim a full fifth (over fifty million) of the population of the United States alone. Another such havoc of historic proportion may be formulated by ecologist gurus more concerned with the number of people than with the number of internal combustion engines and unconcerned about moral resources properly so called. Would that mankind not find out at its own grave peril that no matter what the impact science may have on history, a perspective other than scientific is needed to secure a reasoned discourse about past events, which is history, and thereby have a safe outlook on the future.

Notes

1. A. Comte, *Cours de philosophie positive* (Paris: Bachelier, 1830-42), vol. I, p. 51. 2. D'Holbach, *Système de la nature* (new ed.; London, 1775), p. 19. 3. *Oeuvres de Condorcet* (Paris: Firmin Didot Frères, 1847), vol. VI, p. 223. 4. B. Russell, *Portraits from Memory* (London: George Allen & Unwin, 1956), p. 20. 5. This transpires even in *Voltaire, Historian* by J. H. Brumfitt (Oxford: Oxford University Press, 1958). See especially the section, "Causation and Development," pp. 104-111. 6. J. B. Bossuet, *Discourse on Universal History*, ed. and tr., O. Ranum (Chicago: University of Chicago Press, 1976), p. 374. 7. "I understand by chance the unknown chain of causes capable of producing such and such effect." *De l'homme*, Sec. I. ch. viii, in *Oeuvres complètes* (Paris: Lepetit, 1818), vol. 22, p. 33. 8. L. von Ranke, *Geschichte der romanischen und germanischen Völker von 1494 bis 1514: Zur Kritik der neuerer Geschichtschreiber* in *Sämmtliche Werke* (3rd ed.; Leipzig: Duncker and Humblot, 1885), vol. 33-34, p. vii. 9. H.T. Buckle, *Introduction to the History of Civilization in England*, new rev. ed. by J. M. Robertson (London: George Routledge and Sons, 1904), pp. 901-02. 10. *Ibid.*, p. 901. 11. See my *The Purpose of It All* (Washington DC: Regnery-Gateway, 1990), pp. 13-14. 12. He did so in his essay, "Fifty Years Hence," (1931); reprinted in *Amid These Storms: Thoughts and Adventures* (New York: Charles Scribner's Sons, 1931), pp. 269-80. 13. S. Zweig, *Die Welt von Gestern* (Frankfurt: Fisher, 1970). p. 15. 14. J. B. Bury, *An Inaugural Lecture: The Science of History* (Cambridge: University Press, 1903), p. 41. 15. J. B. Bury, *The Idea of Progress: An Inquiry into Its Origin and Growth*, with an introduction by C. A. Beard (New York: Dover, 1960), pp. 351-2. 16. Bury, *The Idea of Progress*, p. 342. 17. K. R. Popper, *The Open Society* (London: Routledge and Kegan Paul, 1952), vol. 2, p. 322. 18. E. H. Carr, *What is History?* (New York: Vintage Books, 1961), p. 93. 19. J. Needham, *History Is on Our Side* (London: George Allen and Unwin, 1946). The subtitle, "A Contribution to Political Religion and Scientific Faith," sums it all up. 20. This and subsequent quotations are from L. H. Gelb's report, "Who Won the Cold War?" on the op-ed page of *The New York Times*, Aug. 20, 1992, p. A26. 21. The point is made with particular force in S. Weinberg's *Dreams of a Final Theory* (New York: Pantheon Books, 1992), p. 210. 22. This characteristic of Fukuyama's diction in his *The End of History and the Last Man* (New York: Free Press, 1992) was already in full evidence in his essay, "The End of History?" *The National Interest*, Summer 1989, pp. 3-18. 23. Translated into English by M. J. Petry as *Hegel's Philosophy of Nature* (London: George Allen and Unwin, 1970). 24. H. Melville, *Moby Dick* (New York: Modern Library, 1926), p. 185. 25. Dionysius of Halicarnassos, *De arte rhetorica*, xi, 2. See ed. H. K. Usener (Leipzig: Teubner, 1895), p. 124. The phrase was memorably rendered by Lord Bolingbroke as "history is philosophy teaching by examples" in the second of his "Letters on the Study and Use of History." *Works* (London: David Mallet, 1754-98), vol. 2. p. 266. 26. With Thomas S. Kuhn is the van. 27. H. Butterfield, *The Whig Interpretation of History* (London: L. G. Bell, 1952), p. 92. 28. J. H. Newman, *An Essay on the Development of Christian Doctrine* (Garden City, N.Y.: Doubleday, 1960), p. 34.