

SCIENTIFIC CREATIVITY AND DECENTRALIZED SOCIETIES The Swiss Cantons and The Rise of The Social Sciences

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The productivity of a country in science as far as the numerical output of its scientific papers is concerned is, in large measure, a by-product of its industrial productivity. Such a purely quantitative approach may lead one to overlook however, that some of the greatest qualitative advances in modern science have been made in the towns of countries relatively less developed in industry. Zurich, Berne, Lausanne, and Copenhagen have been such centers of the highest scientific originality. Among the decentralized Swiss cantonal towns, Lausanne was especially noteworthy for affording a university base for the work of Vilfredo Pareto and Léon Walras, pioneers in scientific sociology and mathematical economics. Pareto regarded the Swiss democratic, decentralized towns as providing the ideal setting for the development of his logico-experimental method, while Walras, debarred from a post in bureaucratic France, was able at Lausanne to found the most original school in economic thought. Decentralized communities, as Kropotkin affirmed, may have an especial role in the preservation of scientific creativity in bureaucratic, industrial societies.

We live in an age where science tends to be regarded as a by-product of industrial development. Engels at the end of the nineteenth century wrote that the tremendous achievements of science in Germany in that era were the consequence of the underlying industrial advance. The growth of French and British science had likewise gone hand-in-hand with the expansion of their industrial bases. Science in the United States had indeed lagged disproportionately behind its industrial development until the end of the Second World War. And science in the Soviet Union experienced a time of troubles during the years of Stalin's repressive regime; the growth of the industrial infra-structure is not a sufficient condition for an efflorescence of science. Nevertheless in the era of the nineteen-sixties, one might affirm that the quality of scientific papers published in the various countries was proportional to the degree of industrial advancement of the respective countries, with allowance made for their diverse sizes of population. Yet such a purely quantitative approach would fail to do justice to some of the greatest moments of the human spirit, to the unparalleled creativity which welled forth from the small Swiss towns of Zurich and Berne, or from the relatively small Danish city of Copenhagen.

In this age of multiple dimensions and massive laboratories, with scientific research highly organized, we might do well to detach ourselves briefly from what William James regarded as the curve of "bigness," and ask ourselves what were the factors which made for the greatness of

science in the Swiss towns (James, 1920:90). This age of large-scale organization might then apprehend a certain measure of truth in the advocacy by Peter Kropotkin and his fellow communalists of the advantages of decentralized, pluralistic centers of economy, science, and life; the "freely varying" element, as John Stuart Mill long ago insisted, is the individual, not the collectivity; and under certain conditions, the scientific originality of individuals will thrive in outlying or off-center regions, where the centralizing forces of bureaucracy are weakest. Perhaps the arts which periodically revive with "off-Broadway" centers have a kind of analogue in the sciences. There was a truth in the federal, decentralist principle which Marxists failed to apprehend. The historian Jacob Burckhardt said of the Swiss that their State was their masterpiece (de Rougemont and Muret, 1941:69). Friedrich Engels, Marx's co-worker, declared, however, that Swiss decentralization was obsolete, the expression of intellectual backwardness: "In diminutive Switzerland it (the federal republic) has long ago become an obstacle, bearable only because Switzerland is content to remain a purely passive member of the European political system" (Engels, n.d.:60). Nothing less than a unified, centralized state seemed to Engels warranted by modern industrial economy.

Yet the phenomenon of the Zürich intellectual radiation was scarcely a passive one. Nor was it an incidental exception, a deviant improbability. It shared a spirit which was found in other Swiss towns, in Lausanne, in Geneva. Indeed, if Zürich was the birthplace of a new standpoint in physics, Lausanne became the center of the new "revolutionary" school of mathematical economics, that of Walras and Pareto. The disenchanting, disillusioned Italian marquis, Vilfredo Pareto, is sometimes characterized as a precursor of Italian Fascism. Nonetheless, when he spoke of the Swiss democracy, even the saturnine Pareto allowed his prose to become eloquent; he stood together with the anarchist Kropotkin and the Bolshevik Lenin in speaking its praise. The cynical Ecclesiastes of sociology wrote: "The best government now in existence, and also better than countless others that have so far been observable in history, is the government of Switzerland especially in the forms it takes on in the small cantons—forms of direct democracy. It is a democratic government, but it has nothing but the name in common with the governments, also called democratic, of other countries such as France or the United States" (Pareto, 1935:1568). Here in the cantons' decentralized societies, in which voluntary associations abounded, bureaucracy was kept to small proportions. Above all, the virtues which Montesquieu thought were necessary for the psychological health of a republic existed. Honesty found a more natural home in this setting: "Small countries such as Switzerland with very honest populations, may remain outside this current which has come down in a muddy torrent from the past to the present and is flooding all the great civilized countries today" (Pareto, 1935:1606).

This decentralized aggregation of cantons, less a system than an association had found a way for achieving a concord of races. The ethnic hatreds which disfigured other European countries were relatively unknown: ". . . the current example of Switzerland is interesting. The remarkable thing about that federalized country is the way it has succeeded in making three races elsewhere hostile, the German, the French, and the Italian live together in perfect peace and concord. That has been due not only to the independence of the Cantons, which has obviated the friction that arises between different nationalities in other countries, allowing each to live according to its own taste, without being shocked by the preferences of the others" (Pareto, 1935:1861). A canton might even decide not to worship the god Progress: "the Grison Canton voted not to allow automobiles on roads built with public funds," though alas, a strong federal pressure was then exerted upon it to desist from "such dire heretical depravity."

In his letters, Pareto (Bousquet, 1960:119) inscribed a sociological ode to his little canton, Vaud:

"I praise and I praise much the canton of Vaud for all the numerous good things, indeed excellent, which are there" (1898).

"As long as I shall be a progressor, I shall remain at Lausanne, and thus shall pay a debt of gratitude" (1897).

"It's a pleasure to live in an honest country! I wouldn't leave here for a treasure" (1912).

"What a pleasure to live in Switzerland! . . . All my gratitude goes to the authorities of the Canton of Vaud, who welcomed me, an exile from Italy, and protected and honored me; to them I owe all" (Biaudet, 1965:43).

The Swiss cantons were cosmopolitan. They were prepared to take their professors from anywhere in the world. In France, the university appointments were confined to an all-national corps of teachers arranged in a rigid hierarchy within one educational system; in the Austro-Hungarian Empire every appointee to a professorship was beholden to one Minister of Education. But the Swiss cantons with their small populations vied with each other competitively on behalf of their seven universities to get the best professors to do their communities honor. Pareto noted with pleasure that when he sought a post on behalf of his friend Maffeo Pantaleoni, Geneva was at once competing with Lausanne (Busino et Stelling-Michaud, 1965:39). He rejoiced that the Swiss regarded their appointments of professors in the spirit of buyers of ideas on a free market. The bourgeois spirit brought a rationality wholly lacking in monarchies and bureaucracies; its appraisals were more "logico-experimental," more without hypocrisy, or (as we would say today), with a minimum of ideology. As Pareto wrote in 1896: "Provided I teach economics well, it does not occur to the Government of the Canton of Vaud to ask me for anything else. I sell lessons; they buy them. And then both sides are free. But the monarchical government of Italy does not look at things that way. It wants to buy not only lectures, but the conscience as well" (Schneider, 1961:284).

Thus, as students in physical science were drawn to Zürich, students of the social sciences were attracted to Lausanne. They found above all a devotion to scientific method. Pareto enunciated his creed: "I am not bound to any party, any religion, any sect. Thus, I have no preconceived idea about the phenomena. I am not even bound to a country, and hence I escape the grip of patriotic prejudice which wreaks such havoc in the social sciences. . . ." (Babio, 1961:301). He too shared in the revolt against all absolutisms in science and morals. Years later, in May 1921, Pareto described his aim in sociology as having been to import "relativity" into the social sciences and to emulate the example of Einstein. He wrote that year to Maffeo Pantaleoni: "My Treatise of Sociology is an attempt, however imperfect, to introduce into the social sciences, that relativity which, in a much more perfect way, has now been introduced into the physical sciences. From the metaphysical absolute, we are gradually moving towards experimental relativity. A tremendous step forward had been made by Galileo, Copernicus and Newton. Another is now being made by Einstein. Who knows, whether a century from now, an odd copy of the Sociology will have escaped being devoured by the rats, by mice, and some researcher will find that, at the beginning of the twentieth century, there was

an author who tried to introduce the principle of relativity into the social sciences. . . ." (Bobbio, 1961:315; cf. BiauDET, 1965:46; Stark, 1963). Thus Pareto, who was voted his first professorship in 1893 by the Vaud Council of State, brought Lausanne a conception of the social sciences far in advance of any counterpart in any of the universities of France, Germany, or Britain.

Pareto had had a great precursor at Lausanne, Léon Walras. When they first met in 1891, Pantaleoni, introducing Pareto to Walras, said: "He is an engineer like you; he is not an economist as you, but wishes to become one like you, if you will help him" (BiauDET, 1965:42). The story of Léon Walras is a high drama of intellectual courage maintained against great odds; again it teaches a sociological moral of the values of decentralized, pluralistic societies. Leon Walras, founder in economics of the so-called Lausanne School, was all his life embattled with those whom he called the "mandarins," the "official school" in France; for a long time they had done all they could to stifle any influence of his work (Oulès, 1950:5).

Walras was enabled to make his great contribution to a mathematical economics only because the town Lausanne could act with disregard of academic bureaucracies.

Born in 1834, Leon Walras could never expect an academic post in his native France. He had moved too restlessly, too individually from one work to another. He had begun poorly by failing twice in the competitive examinations for admission to the Ecole Polytechnique; with typical eccentricity, he prepared for the examinations by reading the works of Descartes, Newton, and Lagrange, instead of taking the usual fare of coaching. His short stay at the School of Mines was followed by forays into literary, philosophical and social studies. Then he made matters still more difficult by becoming an advocate for the nationalization of land. He began publishing essays in mathematical economics in 1860, but the doors to an academic post were closed. In all France, there were but three chairs in political economy, and these were monopolized by the orthodox school, "by that school," in the words of a successor of Walras, "which through sundry arguments, often contradictory and always bad, depicts the actual social regime as the nec plus ultra for satisfying humanity to the end of time." Indeed, the chairs seem to have been regarded as a species of family property. As for the journals, they were organs subservient to governmental policy. Walras' articles were rejected by the Journal of Economists; thereupon he left Paris. Later he recalled how the Vice-Rector of the Academy at Paris had explained to him that he lacked the religious and metaphysical background to lecture on the philosophy of science: "I rise; I go to pick up my hat at the console, between two windows looking out on the court of the Sorbonne; I make my salutations, and leave. . . ." Through this fog of frustration came the ray of hope from Vaud. Some of the canton's government remembered his paper of 1860 on taxation, and they nominated him for the chair at Lausanne (Oulès, 1950:108-109).

Walras, as candidate for the chair at Lausanne, was the favorite of no party. He wrote in 1870: "I neither belong unreservedly to the economic school which regards itself as orthodox, and anathematizes socialism much more readily than it refutes it, nor to the empirical socialism, which prides itself on its ignorance and contempt for political economy" (Oulès, 1950:118).

He was installed into his professorship in 1871; France and Prussia had just fought a war, and the Paris Commune had been suppressed in a civil war in which many were killed. In quiet Lausanne, the chief of public instruction, Louis Ruchonnet, welcomed Walras with memorable words on the place of small towns in the advancement of science:

This study, this great study today in the domain of social and economic questions, where shall it be carried on? Shall it be in the big cities where the issue is a burning one, and where an immediate solution is demanded? I do not think so, and I permit myself to ask if our little country might not be perhaps a propitious soil for social science.

We are at peace. Our institutions are republican. Our population, in a general prosperity, hears only the echo of the struggles which elsewhere divide the different classes. Do we not have the milieu in which free inquiry could feel itself at ease? I think so and it would be a glory for our country to open a school from which perhaps the fruitful solutions for the peace and happiness of humanity might flow (Oulès, 1950:124).

Thus Walras was enabled to realize his life's work. The poet Alfred de Vigny once characterized a beautiful life as "a thought conceived in youth and realized in ripe years"; this Walras felt was the rare good fortune which Lausanne had brought him (Jaffé, 1965:35).

Walras in an autobiographical essay wrote that his career was that of a man "who had deceived himself with respect to his native country," for seeking "to accomplish a work of renovation," he had met obstacles to independent thinking "in a country where science is official and the schools specialized." Pareto summed up the situation with his customary acerbity. The French Academy of Moral and Political Sciences, he observed, had just honored with its membership a man "whose scientific works are rather unknown," - Theodore Roosevelt; by contrast, they never thought of making one of their own their compatriot Walras, to whom the science owes so much. It is so much the worse for the Academy, not for Léon Walras." Pareto concluded:

It is to the canton of Vaud and to its authorities that Léon Walras owed the chance to be able to teach and complete the study of his theories. It is the canton and its authorities that science will forever be grateful for the advances which Léon Walras contributed. This will be an example often cited to show the advantages of freedom of science as against the fetters of academic coteries (Pareto, 1910:146).

"Without the intellectual liberalism of certain Swiss universities, and particularly that of Lausanne," wrote the author of L'Ecole de Lausanne, "a scholar of the creative power of Leon Walras would not have been able to devote his time and strength to the study of political economy" (Oulès, 1950:6).

Lausanne, Zürich, Berne, Copenhagen, all remind us that the scientific spirit is not the satellite of large-scale organization and technology. Precisely as the latter grow preponderant in modern society, it is important to preserve the pluralistic existence of small centers in which the individual can realize more fully his own character, and in a more tranquil setting, allow his thought to determine themselves rather than to be shaped by an impersonal collectivity.

Footnote

¹The Norwegian petty bourgeois society, however, aroused mixed feelings on the part of Engels. The Norwegian petty bourgeois world, he wrote, was one "where men are still possessed of

character and initiative and the capacity for independent action, even though their behavior may seem odd to a foreign observer." George V. Plekhanov, the patriarch of Russian Marxism, nurtured such impotent individualists as Ibsen and Kierkegaard: "In petty bourgeois society, men whose 'spirits' are driven to 'revolt' must necessarily be exceptions to the general rule. . . . Having no social power, these spiritual 'aristocrats' remain isolated individuals, and in compensation, devote themselves all the more zealously to the cultivation of their personality. Their social environment makes individualists of them, and then they make a virtue of necessity." Cf. Friedrich Engels, Franz Mehring, George V. Plekhanov, Anatol Lunacharsky in Angel Flores, 1937:24, 58. But precisely this petty bourgeois individualism was the spiritual soil in which grew such men as Einstein and Bohr as well as Pareto and Walras.

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