



Michael Polanyi hiking in England around 1933.

[BOOK REVIEW]

The Polanyi Puzzle

By Michael D. Gordin

The career of Michael Polanyi (1891–1976) presents a puzzle that dominates Mary Jo Nye’s *Michael Polanyi and His Generation*: how could one person occupy two completely different realms of thought, and do it so ably?

First, consider the social sciences. Just about everyone interested in the history or sociology of science has some familiarity with Polanyi’s ideas, although they may not realize it. For example, many scholars invoke his articulation of “tacit knowledge”: the understanding you possess but cannot make explicit. The classic example is riding a bicycle. Go ahead and try it: write down complete instructions

for how to ride a bike. Can’t do it? Doesn’t matter. You *know* how to ride, even if you can’t articulate it. Polanyi’s point was that much of scientific knowledge—especially experimental knowledge—was of this tacit sort, which explained important aspects of the scientific life, from pedagogy to scientific practice.

MARY JO NYE. *Michael Polanyi and His Generation: Origins of the Social Construction of Science.* Chicago: University of Chicago Press, 2011. 432 pp. \$45.

If one is a chemist or a physicist, Polanyi's name resonates with his seminal research in chemical kinetics and dynamics, where he developed both the experimental and theoretical work for his concept of the "transition state." (His American collaborator, Henry Eyring, dubbed it the now more familiar term "activated complex.") But Polanyi did much more than that: his detailed research on the adsorption of gases to the surface of metals is today less well known than that of his direct competitor Irving Langmuir (awarded the Nobel Prize in Chemistry in 1932 for his alternative theory), while his X-ray crystallographic research sparked intense discussion in the interwar period. Both working under Fritz Haber at the Kaiser Wilhelm Institute for Fiber Chemistry in Berlin and directing his own lab in Manchester after being forced out of Germany by Nazi racial laws, Polanyi became renowned as a titan of physical chemistry.

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That is the nub of the puzzle: how do these parts fit together? Polanyi was a world-class chemist, and yet he abandoned active research to teach social theory and philosophy, penning works on the failure of economic planning and broadsides against Joseph Stalin and his British supporters. As philosopher Isaiah Berlin was reported to have quipped about Polanyi: "[T]hese Hungarians are strange. . . . Here is a great scientist giving up the Nobel to write mediocre works of philosophy" (p. 304). One can surely disagree about the value of Polanyi's philosophical writings; one cannot deny the strangeness.

Nye, however, does not think it strange. The book shows the continuities between the phases of Polanyi's manifold career—from Budapest, to Berlin, to Manchester, to Oxford; from medicine, to physical chemistry, to economics, to politics, to philosophy of science—and

convincingly demonstrates how each phase furnished Polanyi with conceptual resources he deployed to tremendous effect in his magnum opus, *Personal Knowledge: Towards a Post-Critical Philosophy* (1958). That book became one of the few crucial works that appeared at the turn of the 1960s to transform our understanding of the scientific process as social (although it was quickly overshadowed by the 1962 publication of Thomas S. Kuhn's *Structure of Scientific Revolutions*).

Polanyi argued that science was not a set of timeless logical methods but a deeply social endeavor tinged with biases, passions, and unspoken tacit assumptions. His scientific contemporary J. D. Bernal argued similar points from the Left; Polanyi was a voice from the free-market, anti-Stalinist camp. Despite their deep political differences, both members of what Nye calls "the 1930s generation" believed science was partially socially constructed, and both thought this social basis was a tremendous strength of science. In the 1990s, historians, sociologists, and philosophers of science were pilloried as being anti-science for making claims remarkably similar to those of the Hungarian-born physical chemist.

Just about every reader will find something of interest in Nye's gripping story of 20th-century Europe. She begins in Budapest with the transformation of a cosmopolitan empire into a nation-state after World War I, the convulsive Communist regime of Béla Kun, and continues with the rise of militant nationalism that induced many talented scientists of Jewish extraction to leave for more cosmopolitan climes. (The topic of religion provides a leitmotif throughout Nye's account: raised in a secular household and strongly anti-Zionist, Polanyi converted to Roman Catholicism, and later in life seemed closest to Anglicanism. *Personal Knowledge* also proved popular among religious thinkers.) In Weimar Berlin, Polanyi found a treasured scientific community that he would elevate into an ideal "republic of science" in later years. When forced into a "second exile" by the rise of National Socialism, he moved to Britain, where he became an active participant in debates over socialism, seasoned by his own negative experiences as a visitor to Soviet Russia. At each stage Nye shows us how Polanyi transmuted his biography into his philosophy, how his "critical reflections on the nature of science very clearly were reflections on the successes and disappointments of his own career" (p. 112). Throughout this transnational story of a whole generation of scholars, Nye not only displays immense erudition but astutely analyzes how the "social construction of science" came to be understood as a critique of science. Close attention to her arguments will reward patient readers from any academic background. ◊

Michael D. Gordin is a professor of history at Princeton University. He is the author of *A Well-Ordered Thing: Dmitrii Mendeleev and the Shadow of the Periodic Table*. His forthcoming book, *The Pseudoscience Wars*, will be out in late summer.