

The following review of Richard Gelwick's *The Way of Discovery: An Introduction to the Thought of Michael Polanyi* (New York: OUP, 1977; Eugene, OR: Wipf & Stock, 2004), which was the first introduction to Michael Polanyi's philosophical thought, is extracted from Phil Mullins, "On Reading Polanyi and Reading About Polanyi's Philosophical Perspective: Notes on Secondary Sources," *The Political Science Reviewer* (Vol. XXXVII) 2008: 158-240. This lengthy review article treats six books which are sometimes used as introductions to Michael Polanyi's thought. Some comments in the extract refer to other books treated in the longer review article.

Polanyi and Discovery:

Richard Gelwick's *The Way of Discovery*

The oldest and still one of the best introductions to Polanyi's thought is Richard Gelwick's *The Way of Discovery*, a book, originally published by Oxford University Press in 1977, which fortunately was re-published by Wipf & Stock in 2004.¹¹⁰ Gelwick first met Polanyi in 1962 when he was in the United States at Stanford; then he worked directly with Polanyi at Stanford, and subsequently off and on, until Polanyi's death in 1976. He wrote the first doctoral dissertation focusing on the implications of Polanyi philosophy and put together the first bibliography of Polanyi's non-scientific writing.¹¹¹ As the book's title suggests, Gelwick uses discovery as the Rosetta stone with which to open up Polanyi's perspective, for Polanyi sees in discovery "the organizing point for a whole view of the world."¹¹² Polanyi presents discovery as the paradigm case of human knowing and finds in it "a calling to a new way of thinking for our whole society," a calling that articulates "a new image of humanity, of an avant-garde that calls its company to see themselves as part of a grand and daring exploration in the cosmos."¹¹³ Gelwick suggests that Polanyi recognized that Western culture was in crisis and particularly that there was in the twentieth century "a crisis of belief about belief"¹¹⁴ that required recovery of our capacity to hold on to transcendent ideals. What Polanyi does is examine discovery and show its fiduciary character; in so doing, he provides "grounds for hope that are consonant with a scientific and rational understanding of the world,"¹¹⁵ and according to Gelwick this hopeful movement is gaining momentum. To describe Polanyi's philosophy with a single term, Gelwick suggests Polanyi's own term "heuristic."¹¹⁶ This is a term that points to the importance of discovery and the breadth and interdisciplinarity of Polanyi's perspective. Polanyi's heuristic philosophy attacked the false ideal of objectivity revered in philosophy, science, and culture in the mid-twentieth century, but it also articulated a new vision of objectivity that emphasizes how knowers "personally participate in that reality that beckons

and guides us to ever broadening and surprising horizons of understanding.”¹¹⁷

Somewhat like the Scott and Mitchell books, Gelwick begins the detailed introduction of Polanyi’s thought by treating his understanding of the problems and disasters of the twentieth century which, he argued, call for a fresh examination of the grounds of knowledge. The late modern cultural situation was one of crisis: “Beset by this collapse of ultimate and unifying beliefs and foundations, thought is adrift in a vast cosmos without distinct origins or directions.”¹¹⁸ Polanyi ultimately came to believe that the clue to the way out of the crisis was to better understand the nature of scientific discovery, but it was his insight into the brutality of twentieth-century experiences that led him to this clue. Polanyi came to believe modern ideas about science “generate destruction” and have, as well, “falsified the foundations of knowledge itself.”¹¹⁹

Modernity is marked by the creative development of natural science and the drive for social and moral progress. But Polanyi became convinced that the violence of modernity evolved from the way in which the twin ideals of “humanitarianism and scientific objectivism”¹²⁰ became intertwined. What happened was that “the fusion of scientific objectivism with intense moral passions” produced “a relentless drive for social amelioration that brooks no dissent or opposition.”¹²¹ In the name of objectivism, political ideologies have arisen in modernity “that invite the individual to surrender his or her self to an interpretation of all life while telling the individual that this interpretation is objectively true and the individual bears no responsibility for it.”¹²² Polanyi pointed out that modern people need to recognize that modern nihilism satisfies moral drives. Polanyi recognized that “to cling to our humanitarian visions, we have to believe in the value and power of ideas that are traditional and transcendent.”¹²³ Such values cannot be objectified, but the reductionistic ideal of scientific detachment simply dismisses such values. Polanyi saw that we have a cultural crisis because we have corrupted such values with corrosive doubt and narrow-minded

obsession with the explicit. His work as a scientist led Polanyi to recognize that a richer account of scientific discovery, better grounded in scientific practice and the history of science, could provide the key to reforming and recovering our ideals.

This narrative comes through more or less in the Scott, Mitchell, and Prosch books, but it is lucidly articulated in Gelwick's book. Another element of Gelwick's discussion is what he calls an "outline" of Polanyi's analysis of how "the objective ideal of knowledge" came to be "a central dogma"¹²⁴ of modern science and science-influenced culture. Gelwick gathers together in a twelve-page, coherent discussion the several elements of Polanyi's reading of the history of Western ideas, which Polanyi sketchily presents in several different texts. But Gelwick emphasizes that, although Polanyi took an interest in and had a sophisticated reading of the development of Western ideas, his objective was to show that the contemporary cultural crisis is rooted in our ideas and can be corrected by reforming our ideas. Polanyi wanted his contemporaries to understand that "the attractiveness of the objective ideal will turn out to be its pseudo-substitution of fact for responsible commitment, the appearance of holding knowledge without risk or values."¹²⁵

Gelwick argues that Polanyi always respected the methods of science but, based on his experience as a scientist, increasingly came to disagree with the common views projected by objectivism about the methods of science. Polanyi turned toward discovery as the key to science and he realized that not much work had been done on discovery. In Gelwick's words, "The nature of discovery was perceived to be the Achilles heel of the objective ideal of knowledge. Once this issue is seen, the paradigm begins to fall and an alternative view begins to arise."¹²⁶ Polanyi's analysis of discovery focused attention on the skilled researcher equipped with proper tools who is attuned to the prevailing views of science. Polanyi thought that the selection of a problem to investigate was a key factor in discovery. Often the importance of a problem was not recognizable until after a discovery. Polanyi's experience taught him that strictness and rigor of procedure were secondary

to creative imagination in scientific work and that this meant that matters of personal judgment were deeply a part of scientific discovery. Polanyi collected cases of significant scientific work in which traditional scientific rules were ignored; his writing about science weaves into the discussion such cases. Gelwick also shows that Polanyi found in Gestalt psychology some clues to the way creative imagination plays into the problem of scientific discovery. Gestalt thinkers recognized that seeing a pattern involves the creation of a coherent whole (itself more than the sum of its parts, or pieces), but “Gestalt psychology had stopped at a more mechanistic point and had regarded perception to be an internal equilibration of external stimuli.”¹²⁷ What Polanyi added was the conclusion that seeing a pattern “is the outcome of an intentional effort of the person to find order in reality.”¹²⁸ Polanyi recognized the implications of this view, i.e., that the act of discovery was “dependent upon our personal powers of thought,” and that his view “overthrew three centuries of epistemology that had built upon a structure of knowledge in which there was no person.”¹²⁹ Thus by “following through the nature of discovery, we are led to a total rethinking of the general ideal of knowledge in our culture. Discovery is the point within science itself that leads to a truer understanding of knowledge and of ourselves as persons.”¹³⁰ Ultimately Polanyi worked out a view which holds that “knowing is an integration of bodily clues that we indwell in order to understand”—a view he described as challenging culture’s “most basic assumptions of our idea of knowledge.”¹³¹

In his second chapter, titled “From Scientist to Philosopher,” Gelwick charts Polanyi’s developing philosophy as a sequence of career changes from medicine to physical chemistry to social science to philosophy. He emphasizes that Polanyi’s moves reveal that he always had very broad interests in the whole world. As I have noted above, Polanyi’s writing reflects his broad interests in its strikingly interdisciplinary nature, so much so that reading a book like *Personal Knowledge* is difficult. Gelwick notes that “Polanyi seems to be a man perpetually fascinated by the ranges of reality that come to us through our experience. . . . The whole world is his

only genuine interest.”¹³² Although Polanyi is sometimes tagged a philosopher of science and an epistemologist, Gelwick rightly insists that Polanyi “never saw the problem of knowledge as an academic problem alone. It was always the question of the nature of our knowing and of its bearing upon the major issues of our life and destiny.”¹³³ Gelwick discusses how Polanyi’s own early experience as a scientist taught him important things about the nature of scientific work. The fate in the scientific community of his own thesis on the potential theory of adsorption as well as his work at the Institute of Fiber Chemistry taught him about the nature of authority and orthodoxy in science and how discoveries work within the framework of authority and orthodoxy. The last two sections of the second chapter provide a brief overview of Polanyi’s major works, focusing on (1) *Science, Faith, and Society*, Polanyi’s first systematic effort in the mid-forties to produce a philosophical statement, and (2) *Personal Knowledge*, Polanyi’s *magnum opus* based on Polanyi’s 1951–52 Gifford Lectures. But there are here also summary comments on Polanyi’s later writing. Gelwick nicely lays out, piece by piece, the major elements of *Science, Faith, and Society* and *Personal Knowledge*, making a case that Polanyi’s reconceptualization of human knowing is no less than a Copernican revolution.

“A New Paradigm,” Gelwick’s third chapter, moves from the overview of Polanyi’s ideas to an expanded discussion of Polanyi’s basic epistemological model. By telling a story that is in fact a composite of examples Polanyi himself uses, Gelwick rather cleverly gets at Polanyi’s fundamental ideas about how a person integrates into a meaningful whole the tacit particulars in which he or she dwells. Later Gelwick discusses the designs (printed in his book) that are made by a series of woodblock prints, which he links to basic claims made by Polanyi’s epistemological model. Here he goes over much of the special vocabulary (“proximal,” “distal,” “tacit explicit,” “subsidiary and focal awareness”) and summary phrases (e.g., “we know more than we can tell”) that Polanyi often used to discuss tacit integration. At the end of his chapter, Gelwick briefly reviews some of the ideas found in other

thinkers in the Western philosophical tradition who seem sometimes on the edge of insights about knowing that resemble Polanyi's theory of tacit knowing. He also comments on what seemed to him, in the mid-seventies, to be signs in philosophy of science as well in the broader culture that the objectivist paradigm was yielding to views more like those articulated by Polanyi. This remains an interesting section of the book because of the emergence in the last thirty years of the literature and culture that we now usually term post-modern. Gelwick concludes his discussion of Polanyi's work as a new paradigm by saying, "[T]he separation of the knower and the known is no longer convincing even though that separation is institutionalized in our habits of thought, our ideals, and our organization of life."¹³⁴ He suggests Polanyi is important not as the first to criticize scientific objectivism but as the first to provide a comprehensive philosophical vision that is an "alternative commensurate with the problems that we face."¹³⁵

After his discussion of Polanyi's basic epistemological themes, Gelwick turns in his fourth chapter, "A Heuristic Philosophy," to broader implications of Polanyi's perspective, what Gelwick calls Polanyi's "new vision that beckons us toward a responsible society of explorers."¹³⁶ This chapter is concerned with Polanyi's "comprehensive and alternative ideal,"¹³⁷ with what I termed, above, Polanyi's constructive philosophizing and *Lebensphilosophie*. In this chapter, Gelwick pulls many elements together. He does a good job of showing how Polanyi's philosophy has "heuristic threads" running throughout that touch "the theme of finding, discovering, growing, expanding, [and] enriching."¹³⁸ He nicely captures Polanyi's optimism and realism about human beings: Polanyi is a thinker "who sets before us the opportunity for unlimited exploration if we can learn to live with the infinite under the conditions of finite existence."¹³⁹ Gelwick's discussions outline the finer details of Polanyi's ideas but he also always is keenly attuned to the broadest parameters of Polanyi's philosophy: "Viewed in its totality, Polanyi's philosophy is one that is aimed primarily at the equipping and encouraging of humans in the unending task of pursuing meaning and truth."¹⁴⁰

What are the several more complicated elements in Polanyi's perspective that Gelwick at least touches on and weaves together in this chapter? He discusses Polanyi's claim that science bears on reality although reality itself is always emerging. He treats Polanyi's ideas about how imagination and intuition work together in scientific discovery. He outlines Polanyi's views about the tacit powers and kinship of all animals. He sketches Polanyi's account of how tacit powers evolve in human beings into the operation of self-set standards and of universal intent in articulate human inquiry. Gelwick shows how Polanyi, expanding his theory of tacit knowing, eventually came to describe the order of the universe as hierarchical: "The universe, from inanimate matter up to human life, presents a highly complex and varied picture, yet it is one of ascending levels of order in which new operational principles come into play as the lower conditions are presented that make them possible."¹⁴¹ This chapter also tries to make clear how Polanyi used his account of the hierarchical structure of the universe to recast ideas about evolution. Polanyi argues, "[H]uman life stands at the top of a long story of achievements, of biotic changes that involved increasing subordination of lower levels to the service of higher ones."¹⁴² Gelwick writes that Polanyi "traces a new theme in the theory of evolution," one which

focuses upon centers of individuality in contrast with the usual concern of natural selection with populations. . . . What is novel here is that Polanyi has aligned his theory of knowing with the emergence of human life so that it gives an account of the rise of intelligent human life.¹⁴³

In the last section of this chapter, Gelwick lays out the way in which Polanyi tried to expand the use of the theory of tacit knowing to describe the discovery of meaning in art and religion, showing how this differs from discoveries of science. These late Polanyi discussions were condensed and complex and Polanyi invented many diagrams to set forth his views. Gelwick does a reasonably good job of trying to explain all of this briefly.

Gelwick's final two chapters round out the discussion by reviewing Polanyi's main themes and commenting on his influence. "Invitation to Explorers" surveys the ways in the mid-seventies that Polanyi's heuristic philosophy was reforming outlooks in different areas. Gelwick briefly comments on how those using Polanyi's ideas were recasting issues in different areas of philosophy and in discussions in religion and art. Of particular value is Gelwick's discussion of the several essays in *Intellect and Hope*, an important Polanyi *festschrift* from the late sixties that included reflections by several prominent thinkers. The last chapter in *The Way of Discovery* pulls together the themes developed in earlier chapters. Although the discussion here would lose some of its resonance, this chapter could be read independently as a very quick introduction providing an account of the shape and significance of Polanyi's heuristic philosophy. Gelwick reviews Polanyi's analysis of the crisis of modern culture and Polanyi's constructive philosophical effort to heal the split between the knower and the known; Polanyi aimed to recover a rich account of the person as engaged in the world. Polanyi confronts materialist reductionism and modes of thought that bifurcate matters into fact and value. Polanyi made clear, Gelwick says in conclusion, that "scientific discovery, instead of expunging our personal beliefs and our participation in the major tasks of knowing and shaping our planetary destiny, calls us to resume the pursuit of truth inexhaustibly."¹⁴⁴ As I noted at the beginning of the discussion of *The Way of Discovery*, this is the oldest of the Polanyi introductions, but it remains, still today, a particularly well-rounded and articulate presentation of Polanyi's main ideas.

Polanyi and Post-Modernism; Jerry Gill's *The Tacit Mode*
Jerry Gill's *The Tacit Mode*,¹⁴⁵ published in 2000, provides a discussion of Polanyi, as its subtitle—*Michael Polanyi's Postmodern Philosophy*—implies, that is pitched at a somewhat different audience than the introductions treated above. *The Tacit Mode* is not, strictly speaking, a basic introduction to Polanyi's thought, like the Mitchell, Allen, Scott, and Gelwick books. Nevertheless,