

The Way of Discovery

THE WAY OF DISCOVERY

An Introduction
to the Thought of
Michael Polanyi

Richard Gelwick

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The Way of Discovery
An Introduction to the Thought of Michael Polanyi
By Gelwick, Richard
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To Beverly, Jennifer, and Allen

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In my “focal awareness,” to use Michael Polanyi’s term, this book began with my meeting him in Berkeley in February 1962. In my “subsidiary awareness,” to continue with Polanyi’s usage, it began long ago with the problems, questions, and challenges posed by my mentors—civic and individual. My debts are beyond my thanking, but I wish to acknowledge some of them.

My relationship to Professor Michael Polanyi and his wife, Magda Polanyi, has been personal as well as professional since I began my study with him in 1962. A perfect book might express my appreciation for their kindness, generosity, and encouragement over the years. As any author knows too well, his book is not perfect, and I must express regret and take full responsibility for any failures of this work to live up to the advantages afforded me by their friendship.

Viewed chronologically, I also know in a “focal” way of the help of the late H. Richard Niebuhr of Yale, Charles McCoy and Durwood Foster in Berkeley, and of my associations with the Society of Explorers, now called the Polanyi Society.

The creative art of my former student, Christa Fuller Burns, contributes directly to Chapter III. The skills and patience of my secretary, Bedonna Clark, have helped in many ways in the completion of the manuscript.

To those who know Polanyi as a friend and daily household topic of conversation—my wife, Beverly, and my children, Jennifer and Allen—I give special thanks for their love and care.

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R. G.

Columbia, Missouri
March, 1977

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Introduction

A TIME FOR EXPLORERS

“It is the image of humanity immersed in potential thought that I find revealing for the problems of our day,” writes Michael Polanyi. “It rids us of the absurdity of absolute self-determination, yet offers each of us the chance of creative originality, within the fragmentary area which circumscribes our calling. It provides us with the metaphysical grounds and organizing principle of a Society of Explorers.”¹ Perhaps no other phrase so aptly encompasses the importance of Polanyi’s investigations as “a Society of Explorers.” It suggests both the centrality of discovery and the comprehensive significance of his philosophy. It pictures the intense effort of the individual pioneer who makes the great breakthrough. But it also images the social roots and ties that surround the seemingly individual triumph.

From his concentration upon the way of discovery in science, Polanyi has moved to universal conceptions that pertain to the

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most basic issues of our time. Polanyi's own life is an illustration of this duality of discovery and universality. At first, he was mainly a physical chemist speaking about the nature of scientific practice, but he soon found the philosophical issues of his laboratory bearing upon the broadest and deepest questions of existence in the twentieth century. To bring his mature philosophy with its foundation in the nature of scientific discovery into adequate perspective, it has to be set in a large field of problems and concerns.

Everyone admires discovery, yet few have studied it, and almost no one has seen in it the organizing point for a whole view of the world. Such a view is developed by Polanyi. Hence, thought on this scale warns and demands at the outset that we be prepared to look farther than usual, beyond the much described joy of creative endeavor, to the global problems of war, political strife, and loss of faith, to the scientific and metaphysical views of reality that underlie our civic, educational, economic, and religious institutions. If Polanyi's discovery of discovery is to be understood as he sees it, it is a calling to a new way of thinking for our whole society. It is the posting of a new frontier in thought, 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. Before turning fully to this philosophy, it is important then to set out four assumptions that will indicate its general relevance.

First and foremost is the assumption that we are living in a crisis of civilized culture. It is a crisis that has been developing for at least several centuries and probably one that recurs periodically in every major cultural epoch as each civilization has to decide to renew itself and live or to decay and die. It is a crisis of the unifying beliefs and traditions that tie a society together and guide its functional progress. Once civilization and culture were virtually synonymous as we thought anthropologically of the artificial secondary environment that humans impose upon nature.² Then we saw the relative cultural values of the various civilizations but felt secure enough to assume that our civilization would continue in some form. Now we are going beyond the fear of value judgments and beyond the recognition that all cultures are relative and are stating plainly that

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we see before us the threats to the civil—the peaceful, orderly, and moral—conduct of global life. This condition is one that needs no extensive argument. The signs of it are rife. Dostoevsky prophesied in the last century that when God or the center of value died in our culture, all things would be permissible. In our century we have seen and are seeing his prophecy fulfilled. Our problem is to understand this crisis in a sufficiently inclusive yet essential way to do something responsible about it. Polanyi has found a crucial connection between our way of discovery in science and the central values of our society that suggests an alternative to the anomie growing throughout our world.

It should be added that the crisis of culture is not only a crisis of Western civilization, as many authors tend to emphasize. We have become globally bound together by the culture of modern science and technology. While there are older and distinctive cultures subsisting, the aspirations and policies of people and governments throughout the world are tied to the new culture of science (Chapter I).

A second assumption arises out of the nature of our cultural crisis, namely, the need for a basis of belief upon which we can act. We are in a crisis of belief about belief. Belief itself is discredited by the philosophies and outlooks that guide our present affairs. The impacts of ethical relativism and of scientific materialism have led to doubting any convictions that cannot be readily proved. There is a widespread lack of self-confidence in countering the eroding trends of nihilism. Uncertainty besets the believer in truth and good as ideals for moral conduct because they are lofty, vague, and difficult to define. Against the more obvious evidence of relativism and laboratory tests, the burden of proof appears unbearable. Truth, good, beauty, justice, courage, and honor are vague and value-laden terms. To try to cling to such ideals in the face of more tangible arguments is nearly impossible. Yet our capacity to hold on to ideals that are transcendent and hard to define is essential for the task at hand. Psychologically, our efforts are weakened when the cause seems futile. When the major symbols of meaning today tell us that we are fated to absurdity, we do not attempt to change

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the situation. At best, we try to live heroically while the world collapses around us, and devoid of any care for the future.³ We need to know if there is a rational and credible basis upon which we can believe in ideals and goals that are less tangible and incapable of conclusive proof. While the tide appears to be against all values that require belief and commitment, there is a need for an undergirding of belief itself. As religion embodies and transmits the central values of a culture, this problem is also a religious issue. Moving from the beliefs necessary for the transmission of science and the training of scientists to the confident and passionate work of the creative scientist, Polanyi has seen a new foundation for the role of belief, a fiduciary character essential to all discovery.

In this connection, it is important to point out that this crisis of belief about belief is not limited to Western religions. We have, since the nineteenth century, acknowledged the high ethical qualities of the great religions of the world along with their unique differences. The influence of all these religions is now under attack and will increasingly be so as the non-Western nations increase their industrialization based upon scientific technology, unless an alternative understanding of belief and knowledge becomes convincing and viable.⁴

The third assumption is that there is a need for grounds for hope that are consonant with a scientific and rational understanding of the world. Generally, modern science has given us the best understanding of the operation and potentialities of nature. The technology built upon this foundation, while dangerous today, is not inherently so if we have the will and wisdom to use it properly. What is needed is not a revolt against science, technology, or rationality but a new vision of science in which human life and its bond with nature can give us a creative home. Since the world views built upon science are largely responsible for our self-alienation and loss of confidence, it is acutely important that we have a picture in which we can be at one with both a scientific understanding of reality and the highest aspirations and beliefs of humanity. Knowing what we do know through science, we need to understand how to maintain and increase our human greatness in a world studied

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and cultivated by scientific knowledge. For this reason, Polanyi's esteem and experience in science are especially important. He speaks from science and for science and opens up thereby a harmony between the "hard" sciences and the rest of our knowledge.

The fourth assumption is partly opinion and partly fact. It seems that there is already under way a new movement against the denigration of values and humanity and for a belief in their potentialities. Despite the prevalence of apathy and resignation, despite the absence of widely-shared beliefs, and in the face of overwhelming pressures, there are many who are contending for the creative and humane possibilities of our lives. This book aims to aid and to encourage such persons by informing them of allies and in particular, of a major intellectual resource in their struggle. When the history of great ideas is done, it usually appears that what at first glimpse looked revolutionary is found upon later investigation to have been prepared and assisted by surrounding forces and events. At least, what is offered here is a view that is already being sought and approached by others. As always, some of the changes are at the fringe, sometimes negative. Nevertheless, it seems that there is abroad a variety of movements and of significant work by major thinkers (Chapters V and VI) that indicates a field of force pointing to a new paradigm (Chapter III).

A HEURISTIC PHILOSOPHY

From the perspective of these assumptions, the philosophy of Michael Polanyi is set forth. It is not because his work has suddenly become recognized widely that a book is needed about his thought. It is because his work itself is at first difficult and demanding.⁵ Truly original and innovative thought could not be otherwise. Yet its relevance to our problems should not be curtailed. This philosophy undertakes the most thorough and profound analysis of all the main epistemological issues raised by science and produces an

alternative proposal. No other thinker since the Second World War has produced such a comprehensive study of the epistemological questions. It is on the merits of its precision in its analysis of our problems, its focus upon the deepest issues of our life, and the range of its theory that Polanyi's thought deserves our consideration.

The philosophy of Polanyi is inherently controversial since it advocates a change from presently accepted modes of thought. It has been called "obscurantist" by competent philosophers.⁶ It has also been praised as the work of "one of the greatest scientist-philosophers of our century."⁷ One prominent contemporary philosopher has refused to take Polanyi seriously because Polanyi is difficult and Polanyi's approach does not fit into "academic philosophy."⁸ Such varied reactions indicate the need for Polanyi's philosophy to be offered in a larger forum of discussion where the awareness of the grave problems of our age facilitates a hearing. As we shall see (Chapter IV), Polanyi's thought calls for a major reorientation of our knowledge, and the criticisms offered have to be weighed fairly against Polanyi's grasp of our situation.

The presentation of Polanyi's philosophy is in itself a major task. Since it is independent of any single philosophical school and arose from his own reflections, this philosophy has to be approached as distinctive and unique. The attempt to present it as a type of philosophy already known turns out to be Procrustean. To be sure, the philosophy has affinities and continuities with previous philosophies. Yet it is new and should not be prematurely classified. As in the case of other original philosophies such as those of Kierkegaard and Whitehead, it may be best to take a term from the philosophy itself to designate it. I am proposing here, for reasons that will become apparent, to refer to it as "heuristic" philosophy, but the term has to be understood with the significance that Polanyi gives it. More important than the name is the new understanding of knowledge and of ourselves that Polanyi has achieved.

Another challenge in presenting Polanyi's thought is its breadth. Ostensibly, his philosophy is a theory of knowledge or epistemology. Although the work begins as an inquiry into knowledge, it

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soon expands into the widest dimensions of that subject and becomes also a philosophy bearing upon ontology and ethics. To put it another way, Polanyi's thought is highly interdisciplinary, drawing upon data from nearly every major department of knowledge. Political theorists, sociologists, economists, psychologists, historians, artists, and educators, as well as lawyers, theologians, philosophers, engineers, and scientists, have found large areas of his work relevant to their special tasks. Hence, the usual philosophical discussion of a topic as theory of knowledge or ethics will not suffice. One needs to employ these philosophical tools and be prepared to expand quickly the framework of the discussion beyond the usual philosophical categories.

OBJECTIVE IDEAL, OBJECTIVISM, AND OBJECTIVITY

One of the most important, yet often misunderstood, issues in Polanyi's thought is his proposal of an alternative to the ideal of objective scientific knowledge. Polanyi deeply believes in objectivity but of a different kind and on a different basis from what is widely understood.⁹ For Polanyi there is a false objectivity that has taken over the modern mind and become expressed in what is called "the scientific outlook." He describes this scientific outlook well when he says, "The declared aim of modern science is to establish a strictly detached, objective knowledge."¹⁰ He also clarifies what he means by this false type of objectivity when he states the aim of his thought: "I start by rejecting the ideal of scientific detachment. In the exact sciences, this false ideal is perhaps harmless, for it is in fact disregarded there by scientists. But we shall see that it exercises a destructive influence in biology, psychology and sociology and falsifies our whole outlook far beyond the domain of science."¹¹ To keep Polanyi's target of this false type of objectivity clear, I shall refer to it usually as "the objective ideal of knowledge," "objectivism," or "the scientific outlook" in contrast with his belief in a

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genuine objectivity and in a truer description of scientific discovery.

The choice of the terms “the objective ideal of knowledge” and “objectivism” is justified on several grounds. First, Polanyi’s attack is upon an outlook that is older and wider than positivism, as we shall see. Positivism is an outgrowth of a deeper epistemological error in the rise of modern science. Second, this false objectivity is a paradigm that operates as a central dogma in our society. In this sense it is a distorted ideal toward which humans strive. Once this false objectivity is understood, we can turn to that truer objectivity, seen by Polanyi in the example of scientific discovery, as it personally participates in that reality that beckons and guides us to ever broadening and surprising horizons of understanding.

After more than ten years of introducing his thought in teaching and articles, I am convinced that the best way for most people to enter into his philosophy is to follow the story of his own intellectual development. People frequently ask where to begin in understanding Polanyi’s thought, expecting me to recommend one of his books. But I find that the best place to begin is where Polanyi began, with the problems and disasters of our century and with the way in which they call for a fresh examination of the grounds of knowledge (Chapter I). Once the problems and the questions are set, we can follow Polanyi toward his new view (Chapters III and IV).

This approach is admittedly a sympathetic one, bent upon calling attention to what may be the first general articulation of a new model of human understanding for our civilization. The attempt to convey the totality of his thought, without the degree of complexity that Polanyi himself presents, suffers the danger of oversimplification. The novelty of Polanyi does consist of his appreciation of much thought that has gone before, as well as his wider grasp of its implications and reorganization of it into a wholly new and constructive view. Many other scholars are now engaged in this more technical and elaborate investigation of Polanyi’s thought.¹² At this point, my aim is to set forth the wider range of his thought. I am convinced of its importance and share

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his belief that all humans are called to be a part of a “Society of Explorers.”¹³ It is to be hoped that Polanyi’s sense of adventure and wonder will come through to those who read this book, and that his effort to follow knowledge from the point of view of discovery will provide substantial foundations for a more human future.

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