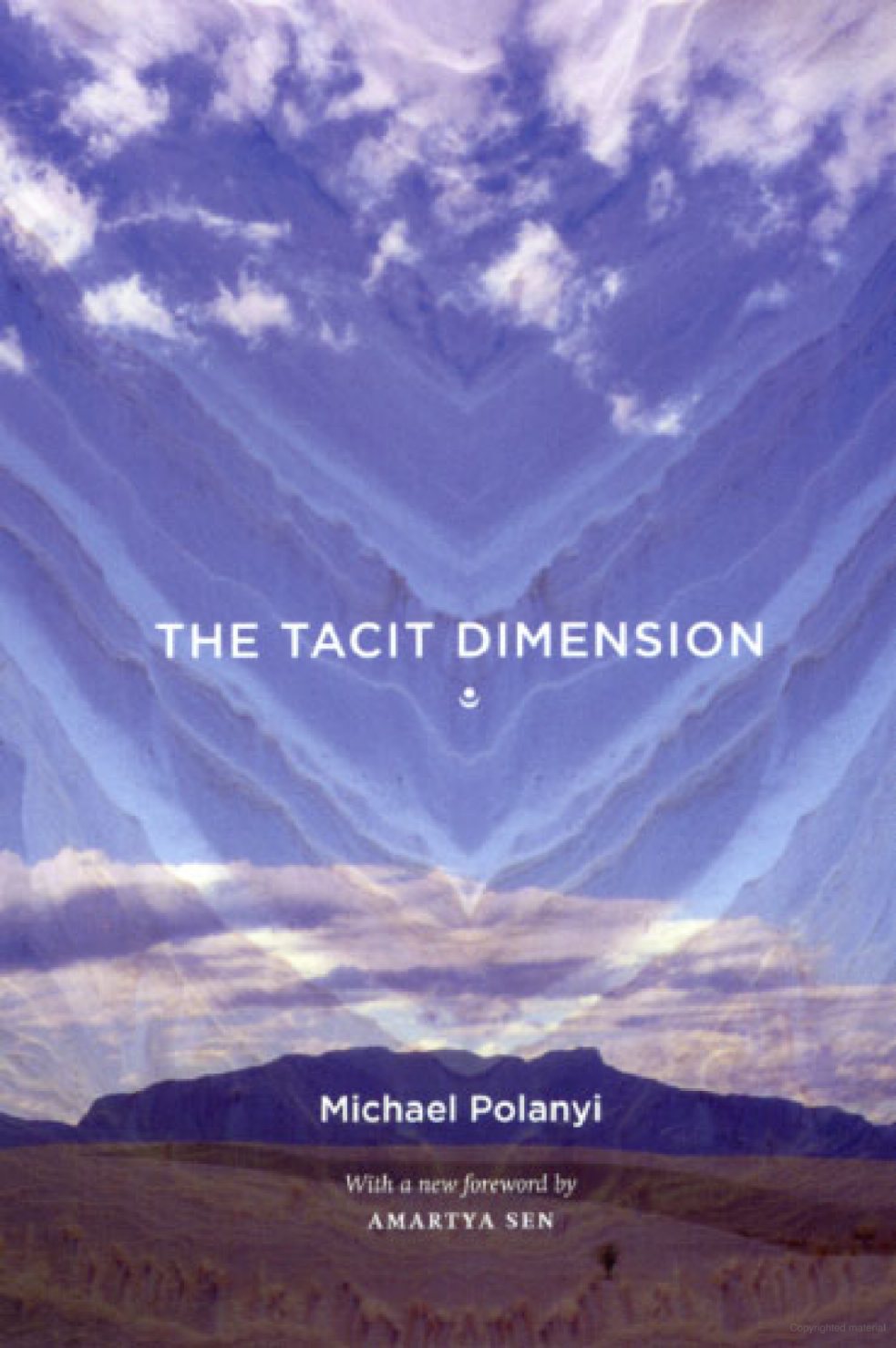

THE TACIT DIMENSION

MICHAEL POLANYI

With a New Foreword
by Amartya Sen

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ACKNOWLEDGMENTS

I am grateful to Yale University for extending to me the invitation to deliver the Terry Lectures of 1962, from which this book has been developed. The theme of the book took shape during my years at Merton College, Oxford, as Senior Research Fellow, and was first expounded in public lectures delivered at the University of Virginia in 1961. I developed these ideas further during my stay at the Center for Advanced Studies in the Behavioral Sciences at Palo Alto, at Duke University where I lectured during the summer of 1964, and at Wesleyan University where I was a Senior Fellow at its Center for Advanced Studies in 1965–66.

I gratefully remember my friends who responded to my thoughts and enriched them. Professor Philip Hallie of Wesleyan, Professor Marjorie Grene of the University of California, and my wife (who also prepared the index) read the manuscript and did much to put it into better shape.

I wish to thank Professor Harry Woolf, Chairman of the Department of the History of Science, for granting permission to use part of my essay "Science and Man's Place in the Universe" which appeared in his *Science as a Cultural Force* (Johns Hopkins Press, 1964).

FOREWORD

1

This insightful book by Michael Polanyi was first published in 1966. It is based on his Terry Lectures delivered four years earlier, at Yale University. It is a deeply philosophical book, full of penetrating ideas, particularly about the knowledge of the world and the world of knowledge. The book, like other philosophical works of Polanyi, has received widespread attention and has generated a large literature. In many ways, it has become a part of contemporary culture, and I am delighted that the book is being reissued.

Interestingly enough, philosophy is not, in fact, the subject in which Polanyi achieved his initial fame. In discussing and assessing the contents of this book and its far-reaching implications, it may be helpful to understand the exceptional range of Michael Polanyi's intellectual interests and involvements, since they strongly influenced the nature of the questions that he asked and the kind of answers he presented.

Long before this book was written, Polanyi had become well known across the world as an extraordinarily innovative scientist, particularly in physical chemistry. Polanyi's scientific career had begun early. He published his much-acclaimed first paper, on the chemistry of hydrocephalic liquid, when he was only nineteen, and his frequent con-

tributions continued, through many decades, to receive praise and admiration. In 1933, when Polanyi resigned his academic position at Kaiser-Wilhelm Institute in Germany (in response to the newly emerging Nazi politics) to take up a chair in physical chemistry at Manchester University, his leading role in the world of the natural sciences was already well established—and had been so for many years.

Before going into his investigations in philosophy (I should say, "on the way" to these investigations), Polanyi pursued economics and the social sciences for a number of years. The political issue that engaged him initially was his sense, based on his disillusionment with the Soviet Union, of the tendency toward a "denial of the very existence of scientific thought." But his queries about science in the USSR were supplemented—indeed complemented—by his general interest in the nature of that society and its economy. Two years after moving to his chair of physical chemistry in Manchester, Polanyi wrote a highly critical monograph on Soviet economic practice, and this was followed, five years later, by a more political book, *Contempt of Freedom*. From then on, he wrote a series of other books on a variety of economic, social and political issues, varying from *Patent Reform* (1944) and *Full Employment and Free Trade* (1945), to *Science, Faith and Society* (1946) and *The Logic of Liberty* (1951). There is, obviously, something of a substantial shift here from Polanyi's earlier work in the natural sciences; indeed, he moved in 1948 from his chair in physical chemistry at Manchester University to a new chair of social

studies that was specially created for him at the same university.

However, it would be, I think, a mistake to see that "shift" as a "break." Polanyi's experiences and ideas in the natural sciences, along with those in the social sciences, would influence his writings in philosophy in what can be described as the next—the third—stage of Michael Polanyi's intellectual journey, to which this book belongs (as does his earlier book, *Personal Knowledge: Toward a Post-critical Philosophy*, published in 1958). In his extraordinarily ambitious attempt to achieve an understanding of the world—physical as well as mental—through the perspective of knowledge, Polanyi found room for pursuing a huge variety of questions that drew, among other things, on the breadth of his own work in different fields, as well as on his seemingly limitless curiosity about the ideas and analyses presented by scholars in a wide range of fields over thousands of years. Michael Polanyi's polymathic background is, I would argue, quite important in understanding the nature of his philosophical engagement.

2

When Michael Polanyi gave his Terry Lectures in 1962, he had entered the eighth decade of his life. When this book, based on those lectures, was first published in 1966, the *Times Literary Supplement* noted, in an enthusiastic review, "In the rich afterglow of his career as a scientist Dr. Polanyi continues to develop philosophical ideas of great fertility and originality." Polanyi himself begins this book

by describing his work on philosophy as "an afterthought to my career as a scientist."

And yet this is a book on science as well. He makes robust use of ideas—his own and those of others—in the physical and social sciences. In giving knowledge such a central position in the comprehension of the world, one has to draw on a deep-rooted understanding of how knowledge emerges and flourishes in the world of nature, especially in the world of human beings and human minds within that larger whole. This is where Polanyi's past work is so important in the genesis of this book. Insights drawn from past scientific works may transcend those works, and yet those works remain critically important for the insights and their use.

The basic insight that launches this book is the understanding that, as Michael Polanyi puts it, "we can know more than we can tell." For example, we can recognize a face clearly enough without being able to tell exactly what features of the face yielded that recognition. The phenomenon relates to Gestalt psychology, which points to the fact that we can integrate the particulars of a physiognomy without being able to identify, in any precise way, those particulars. Polanyi shows that "tacit knowledge" that cannot be easily formalized and put into exact words has a sweeping presence in the world, and he goes on to argue that it is also a central feature of our knowledge of that world.

In the first chapter of the book, Polanyi explores the far-reaching—and sometimes astonishing—implications of tacit knowledge. We get a collection of related propositions here: "Tacit knowledge is

shown to account (1) for a valid knowledge of a problem, (2) for the scientist's capacity to pursue it, guided by his sense of approaching his solutions, and (3) for a valid anticipation of the yet indeterminate implications of the discovery arrived at in the end."

3

Polanyi also uses the idea of tacit knowledge to tackle a paradox, discussed by Plato, called "Meno's paradox." This deals with the view that the search for knowledge is an absurdity, since either you know it already, in which case no search is needed, or you do not know what you are looking for, in which case you cannot expect to find it. In contrast, Polanyi argues that if tacit knowledge is a central part of knowledge in general, then we can both (1) know what to look for, and (2) have some idea about what else we may want to know. One implication that Polanyi draws from this perspective is that "the process of formalizing all knowledge to the exclusion of any tacit knowledge is self-defeating." This has subversive implications for the general approach of formalization since it looks for "the kind of lucidity which destroys its subject matter."

Beginning with his exploration of the nature, reach and implications of "tacit knowing," Polanyi goes on to investigate "how the structure of tacit knowing determines the structure of comprehensive entities," and then examines the foundational implications of these recognitions in understanding the nature of the world at different levels. He

looks for a framework within which we can define "responsible human action, of which man's moral decisions form but a particular instance." The book ends with a pointer to Polanyi's program of trying "to affiliate our creative endeavors to the organic evolution from which we have arisen," and to understand how all this might relate to "a purpose that bears on eternity." I shall not try to summarize the sophisticated arguments that take Polanyi through this long line of reasoning, but even those who would find the endpoint of the book to be far too ambitious would certainly reap a great many insights from the wide-ranging discussions that Polanyi presents to his readers.

4

A question that may be worth asking relates to Michael Polanyi's continuing status as an "outsider" in professional philosophy, despite his extensive and forceful writings, including this book, on that general subject. Ideas from Michael Polanyi's writings are often cited and used in intellectual discussions, even in professional philosophy, but typically they are treated as suggestions coming from outside the profession.

This is not, in any sense, a failure of Polanyi's purpose. One does not have to be an "insider" in professional philosophy to make powerful philosophical points that engage the attention of a great many people—both inside and outside professional philosophy.

Among the really interesting points to emerge is

the understanding that operations at a higher level cannot be accounted for by the laws governing its particulars forming a lower level. This would militate, for example, against what Polanyi describes as "the predominant view of biologists—that a mechanical explanation of living functions amounts to their explanation in terms of physics and chemistry." The importance of tacit knowledge has implications, Polanyi argues, for the impossibility of depersonalizing knowledge and the difficulty of seeking objectivity in the form of personal detachment. He also uses his line of reasoning to assign a place for authority and to make room for tradition in the enterprise of knowledge. There are a great many interesting points in the book that would engage the reader, even if it is too much to expect that every reader would invariably agree with the conclusions that Polanyi derives from his stimulating lines of inquiry.

5

However, the question does remain: given the reach of his philosophical ideas, why is Michael Polanyi treated as a respected outsider, rather than as an insider, in contemporary Anglo-American philosophy? To say, as some have done, that this is because he was mainly in the tradition of what is called "Continental" philosophy cannot be an adequate answer. For one thing, Anglo-American philosophy does treat Continental philosophers as distinctly professional philosophers, even though working in a different tradition. The Anglo-American philosophers who have no time for, say, Heidegger, would

tend to place his works within professional philosophy—albeit at its misguided end. Also, Michael Polanyi's work, with his focus on science and rationality, has much in common with many of the basic ingredients of Anglo-American philosophy.

What then is the answer? It is perhaps relevant to note in this context that the questions that engaged Michael Polanyi were not the ones that were central to the debates in professional philosophy at that time. For example, Polanyi stayed firmly outside both sides of the philosophical divide in the debates in the declining days of logical positivism. He explicitly rejected positivist philosophy—not surprisingly, given his skepticism of detached verification or falsification as a criterion of soundness of knowledge. But he also rebuffed the alternatives that were then emerging. For example, he was not persuaded by what came to be known as "ordinary language philosophy," since he did not want to give that much importance to "linguistic rules" (Polanyi is more explicit on this subject in his earlier philosophical book, *Personal Knowledge*). Even though he spent quite some time in Oxford, it is hard to see any particular influence of the Oxford analytical school on his work.

On a related matter, Polanyi was in disagreement with the "early Wittgenstein" of *Tractatus Logico-Philosophicus*. Among other things, he clearly did not believe that important recognitions can typically be articulated very "clearly," but nor, unlike Wittgenstein, did he see that to be an adequate reason to "be silent" (as advised in the *Tractatus*). However, the "later Wittgenstein" of *Philosophical Investigations* did not satisfy Polanyi any more

than did the *Tractatus*, and he expressed himself firmly against relying so much on rules of language. The philosophical divides that engaged Anglo-American philosophers of that period left Polanyi rather cold, and this did not make his integration into mainstream philosophy any easier.

Certainly, being outside these major debates would not have helped Polanyi to become an insider in professional philosophy, but the main reason for his outside status lies, I think, elsewhere. It perhaps lies mostly in the fact that in many ways Polanyi actually *chose* to remain an outsider to mainstream philosophy. His books in philosophy are not written in quite the way standard philosophical books are written. The format of presenting a few sharply defined questions, followed by very detailed—and rather fussy—answers, did not appeal to Michael Polanyi. Nor did he espouse the profession's usual practice of explicitly stating various interpretations of what looks like the same statement and then discussing each interpretation at great length.

Instead, what we get from Polanyi are rather rapid-fire sequences of insights—often deep insights—without much pause for examining alternative interpretations and possible counterarguments. But what may be missed here by professional Anglo-American philosophers can be a source of relief and delight for the general reader interested in philosophical issues (not many general readers, I would suspect, long for a 200-page dissection of the meaning and content of, say, "intentions"). If this is right, then the popularity of Polanyi's work among the general public, on the one hand, and

the somewhat distant treatment, on the other, it receives from professional philosophers are not caused by different factors—they relate, to a great extent, to the same features of Polanyi's philosophical writings.

I cannot help feeling that Michael Polanyi would have been quite happy with this trade-off, since he wanted to communicate widely his far-reaching ideas, and also had relatively little patience for finicky discussions in professional philosophy. He would have been content, I think, to be seen as someone with foundational philosophical ideas that actually engaged others, whether inside or outside the narrowly defined boundaries of professional philosophy. The distance from professional mainstream philosophy was, I think, Polanyi's own decision—perhaps a tacit decision, rather than an explicit choice.

The reissuing of this remarkable book gives us a new opportunity to see how far-reaching—and foundational—Michael Polanyi's ideas are, on some of the age-old questions in philosophy. It is a wonderful privilege for me to have a little role in the republication of this short but truly grand contribution to our knowledge and understanding of the world in which we live.

Amartya Sen

INTRODUCTION

This book is an interim report on an inquiry started more than twenty years ago. My ideas were first given a systematic form in *Science, Faith and Society* in 1946. I considered science there as a variant of sensory perception and developed this view into three lectures on the subjects Science and Reality, Authority and Conscience, and Dedication or Servitude. In my Gifford Lectures (Aberdeen, 1951–52) I greatly expanded these themes by including the whole range of knowledge rooted in the life of animals and men. The result was *Personal Knowledge* (1958), supplemented by a theory of historiography in a small book, *The Study of Man* (1959). Since then I have continued this inquiry and published some twenty essays (listed in the Related Bibliography) as well as piled up much unpublished writing.

The present volume is the first account in book form of the work done during these nine years. The delay was caused by hope and by fear. The lure of the next bend behind which new sights might appear distracts us from the labor of taking stock, and the effect of this distraction is reinforced by the anxiety that our theories might be defeated at the next turn.

It took me three years to feel assured that my reply to the *Meno* in the Terry Lectures was right. This has at last been cleared up to my satisfaction in my essay "The Creative Imagination," published in *Chemical Engineering News* (Vol. 44 [1966], No. 17).* It ap-

* This essay was written for the Study Group on Foundations of Cultural Unity held at Bowdoin College in August 1965, and will also be published in their pro-

pears now also that what I have said in the Terry Lectures about our capacity for seeing and pursuing problems had been said long ago in *Science, Faith and Society*. Besides, my hesitant suggestion in the Terry Lectures that tacit knowing is the way in which we are aware of neural processes in terms of perceived objects has been consolidated in my essay "The Structure of Consciousness," recently published in *Brain* (Vol. 88 [1965], Part IV, pp. 799–810).

The Terry Lectures of 1962 thus give a correct summary of my position. The text of Lectures 1 and 2 has been retained virtually unchanged. The opening and closing sections of Lecture 3 are essentially retained, but the link between them has been reshaped by insertion of a more detailed account of the pursuit of science in society.

Viewing the content of these pages from the position reached in *Personal Knowledge* and *The Study of Man* eight years ago, I see that my reliance on the necessity of commitment has been reduced by working out the structure of tacit knowing. This structure shows that all thought contains components of which we are subsidiarily aware in the focal content of our thinking, and that all thought dwells in its subsidiaries, as if they were parts of our body. Hence thinking is not only necessarily intentional, as Brentano has taught: it is also necessarily fraught with the roots that it embodies. It has a *from-to* structure.

A variety of operations based on this structure has proved it to be a richly revealing representation of thought. The fact that it is impossible to account for the nature and justification of knowledge by a series of strictly explicit operations appears obvious in its light, without invoking deeper forms of commitment. And

ceedings, "Toward a Unity of Knowledge" (*Psychological Issues*, in press).