

SCIENCE AND REALITY, RELIGION AND GOD: A REPLY TO HARRY PROSCH

by *Richard Gelwick*

Abstract. Michael Polanyi saw his epistemology as restoring the capacity of a scientific age to believe again in the reality of God known through religion. This central feature of Polanyi's thought, discussed in my book *The Way of Discovery*, is disputed by Harry Prosch, co-author with Polanyi of *Meaning*. Prosch's argument is that while in Polanyi's view science deals with an independent reality, religion and theology do not and are only works of our imagination. This article answers Prosch with a review of Polanyi's Christian affiliations, his conceptions of the common ground of science and religion, the levels of reality to which both science and religion provide access, and his expressed aim to liberate faith from scientific dogmatism.

At the American Academy of Religion discussion of *Meaning* in 1979 in New York, and in a review of my book, *The Way of Discovery*, Professor Harry Prosch, co-author with Michael Polanyi of *Meaning*, claimed that Polanyi had in mind a different interpretation of the relationship between science and religion than I and other theologians have expressed.¹ Prosch claimed that Polanyi, while showing the structure of tacit knowing in all of our cognition, had made a sharp distinction between science and religion with respect to their bearing upon reality. In the case of science meaning bears upon realities that exist independently of the knower and consequently is subject to verification. In the case of art, myth, and religion, says Prosch, meaning bears upon realities that are sustained only by our continuing creation of them. According to Prosch, Polanyi did not conceive of the realities of religion as existing independently of us in a way continuous with or parallel to the realities of science. To Prosch the realities of religion are only works of our imagination.

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From that meeting and from Prosch's review of *The Way of Discovery*, it has become clear that we need to confront this central issue of Polanyi's interpretation of religion. The consequence of Prosch's view is extremely serious. It would mean that, while Polanyi restored the role of faith in all knowing, he had done it only to believe in God as a figment of our imagination. Such a purpose, I will show, was never held by Polanyi. Indeed, he did intend to renew our ability to believe in the truth and reality of God known in our Jewish and Christian heritage.

CHRISTIAN AFFILIATIONS

There are a number of generally accepted facts about Polanyi that we all recognize, and that I understand not to be in dispute. The first of these is that Polanyi was a Christian baptized as an adult in the Roman Catholic Church several years prior to his marriage to Magda Kemeny in 1921. A second is that Polanyi participated ecumenically as a leading intellectual in the Christian community. One example of this ecumenical participation was his years of meeting with the Moot, which was founded by Joseph Oldham (head of the International Missionary Council) and who was in many ways a pioneer of the World Council of Churches.² Another example is Polanyi's major address "The Scientific Revolution" to the assembly of the World Student Christian Federation in Strasbourg in the summer of 1961.³ This address most of us know as "Faith and Reason," its title when it was published in the United States. A third fact is that Polanyi widely encouraged theologians to use his work and graciously accepted their invitations for lecturing. Most notable among these lectures are, of course, the Gifford lectures and the Duke lectures. The stipulations of the Gifford lectures say: "For promoting, advancing, teaching, diffusing the study of natural theology, in the widest sense of that term, in other words, the knowledge of God and of the foundation of ethics."⁴ A fourth fact, too obvious to need documentation is that Polanyi consistently discussed religion in his writings as one of the crucial institutions vital to the life of a free society. Finally, Polanyi chose for the literary executor of his estate, Thomas Torrance, now emeritus professor of Christian dogmatics of the University of Edinburgh, formerly moderator of the Church of Scotland, and one of the leading theologians in the world today.

COMMON GROUND FOR SCIENCE AND RELIGION

Clearly then it is not a question of Polanyi's relation to or interest in religion and the Christian faith that is disputed. The central question is what Polanyi meant by his epistemology with respect to the ontolog-

ical status of religion and of God. My general contention in *The Way of Discovery* and in earlier publications is that Polanyi showed both a common ground of knowing in all fields through the structure of tacit knowing and an exploration of the ranges of reality through the complementary effort of these various fields.⁵ To put it in another way, Polanyi's philosophy is a heuristic philosophy calling all knowers to accept the responsibility of exploring toward the truth from whatever field in which they inquire. Theologians and natural scientists are engaged not only in using subsidiary awareness and focal integrations in order to achieve their respective forms of knowledge, but they also are engaged in the pursuit of understanding different levels of the reality that is the ground of our being. From the point of view of natural science this reality appears more as a material system of laws. From the point of view of philosophy and theology this reality appears more as divine and spiritual power that has brought forth from matter a conscious human awareness, able to know and to create by trusting in the ultimate goodness of this reality. Furthermore, in my understanding in the light of Polanyi's epistemology, Christian theology is not only encouraged by the restoration of the fiduciary component in science and in all knowing, but it also is called to purify its own household of concessions to an objectivist understanding of science and to become alive as a field of exploration itself. As the scientist is called to an ever-deepening knowledge of nature, so also is the theologian called to ever-deepening knowledge of God through the *logos* of the Christian revelation. Hence, if Prosch were correct in his interpretation of Polanyi on religion, I would have to alter substantially my conception of a "post-critical" theology.

Taking up Prosch's critique in his review of my book, his first criticism is that I "fail(s) to take account of certain distinctions Polanyi made between science and what he came to call 'works of the imagination'; symbols, metaphors, poems, dramas, art, myth, ritual and religion."⁶ My reply is that this claim is patently false. In *The Way of Discovery*, I said:

One of the most striking features of Polanyi's understanding of tacit knowing is the way it illuminates the distinctive heuristic roles of various fields of study. The nature of the reality discovered in science is one that allows for a greater degree of control and of description in comparison to the reality discovered by art where we are more left to our interior sense of understanding. In his last book, *Meaning*, consisting of lectures given at the University of Chicago, Polanyi makes this difference into a part of his comprehensive theory. This serves to demonstrate how a Society of Explorers is a joint enterprise with each field bearing a significant responsibility for the growth of thought and understanding.

To clarify the difference between the sciences and the other fields, Polanyi notices that scientific knowledge does not "carry us away" in the same degree as art, morality, and religion do. This difference is further illuminated by

Polanyi's distinguishing two poles in knowing, one called "self-centered" and the other, "self-giving." The "self-centered" is that form of knowing that is more confined to perception in its observational aspect and to the gaining of the kind of knowledge that we call "scientific." This form of knowledge does not depend as much upon our knowledge of it for its existence. One way in which this is manifested daily is in our employment of all sorts of scientific knowledge in our use of technology. This knowledge is effective without our paying specific attention to it. Few people think of their constant use of mechanical principles discovered by science when they turn on an electric switch or drive a car. On the other hand, a painting, a poem or a symphony requires our attention in a different way in order for it to have a significant existence. We have to notice it, follow it, and try to fathom its depth. This difference helps us to see why Polanyi speaks of works of art, morality, and religion as "carrying us away." These are forms of knowing that increase our involvement in significant ways.⁷

Following this statement are five pages of diagrams and of exposition tracing Polanyi's explanations of how we move from self-centered integrations in science to self-giving integrations in symbols, ritual, metaphor, painting, and plays, and in moral standards. Then, I make the following generalization:

Thus, we arrive at a point where it is epistemologically shown that "self-giving" integrations are the means by which humans have risen far beyond the prearticulate intelligence of their animal ancestors. These integrations go beyond the "self-centered" ones that describe science because of the increased intrinsic interest that comes from their bearing upon ourselves and reality. Our most universal and compelling knowledge and standards share the same personal foundation as scientific knowledge; the difference in some areas such as art and religion is that we face the demand upon ourselves that these creative integrations make. These are not less true, but more challenging.⁸

My presentation does take account of the distinctions that Polanyi made between science and "works of imagination," but I did not draw the conclusion that only science bears upon a reality existing independently of us.

In support of his critique, Prosch calls upon Polanyi's distinction in *Personal Knowledge* between verification in science and validation in mathematics, religion, and the various arts. However, in the exact passage to which Prosch refers, Polanyi seems to uphold my position, for Polanyi says: "Our personal participation is in general greater in a validation than in a verification. The emotional coefficient of assertion is intensified as we pass from the sciences to the neighboring domains of thought. But both verification and validation are everywhere an acknowledgment of a commitment: they claim the presence of something real and external to the speaker."⁹ Polanyi's distinction between science and religion here seems to be mainly in terms of the degree of personal participation, not in the denial of an external reality to religion.

Later in *Meaning* Polanyi does amplify his distinctions with the terms “self-centered” and “self-giving” integrations and with “natural integrations” and “trans-natural integrations.” It is interesting that when Prosch reports these he does not present them as complementary but as antithetical, for he describes them as “versus” each other, suggesting a fundamental dichotomy.¹⁰ When we look at Polanyi’s rendering, we find no such antipathy but an attempt to discriminate between the meanings of science and the meaning of the arts and values, all formed by our personal knowledge. Completing his basic presentation of the distinction between self-centered integrations in science and self-giving integrations in symbols, Polanyi in *Meaning* says:

the *essential difference* [emphasis mine] between indication and the whole group of meanings of which symbolization is one kind lies in the relation of the self to the whole process. Personal participation and indwelling of clues, though they are certainly always involved in all types of indications, tend in indication, to integrate these clues into entities that seem to be projected away from the self as a center. Perception, for instance is of things seen from the self as a center. The self is never carried away in indication; it is never surrendered or given to the focal object. As we have noted, indications are always *self-centered*. By contrast symbolizations are *self-giving*. That is, the symbol, as an object of our focal awareness, is not merely established by an integration of subsidiary clues directed *from* the self to a focal object; it is also established by surrendering the diffuse memories and experiences of the self *into* this object, thus giving them a visible embodiment.¹¹

The essential distinction made by Polanyi rests upon an increase of the self’s involvement and not upon the “indications” being related to an independent reality, and the “symbols” not being related to reality.

In this same discussion in *Meaning* Polanyi further says that his epistemology is needed so that modern persons will be able to affirm the bearing on reality of their highest values: “Contemporary man therefore needs a theory of these meanings that explains how their coherence is no less real than the perceptual and scientific coherences he so readily accepts.”¹² In an earlier version of this chapter given as a lecture, Polanyi also spoke of the levels of reality known by natural science and by the various arts and religion: “Later on, in my third lecture, I will show that the combination of subsidiary and focal awareness is needed for comprehending the relation between consecutive levels of reality and so to sustain our knowledge of principles above the domain of inanimate nature.”¹³ Since our primary question is Polanyi’s intention with respect to the ontological status of religion and of God, it is important to notice that Polanyi spoke of “consecutive” levels of reality, not of discontinuous or antithetical levels.

The most crucial distinction that I failed to take account of, according to Prosch, is the “relative roles of discovery and creation” in the two kinds of knowing, self-centered and self-giving.¹⁴ Prosch says:

the meanings achieved in science are understood by us to be intimations of realities that exist independently of ourselves. . . . In contrast to the above situation, the works of our imagination are created by us. They do not exist independently of us. Their meanings *become* realities; but the existence of these meanings always depends not only upon the fact that they were initially creations of man but also, and more importantly, in that their validity depends upon their continuing to be created out of incompatibles (their "frames" and their "stories") by acts of imagination on the part of these [*sic*] who continue to be moved by them. These incompatibles always remain incompatible in their joint meaning whenever they are integrated by anyone in an act of his imagination as he sees and appreciates the meanings of works of art or of religious rites, worship, and thought. And so they are always, he [Polanyi] maintained, "transnatural" constructions of natural incompatibles, the meanings of which may be *valid*; but they can never assume the same status ontologically as the natural realities or meanings aimed at in perception and science. Thus, any *verification* of them is simply out of the question.¹⁵

Here Prosch exposes what I believe is his fundamental misunderstanding of me and of Polanyi, namely, that "verification" is the essential and highest characteristic of an external and independent reality. To put my criticism of Prosch sharply, it seems that he has taken a positivist stance on what is real. Prosch's statement seems to imply that science has a superior status because its meanings or ideas can be tested by perceived facts, and only ideas so tested indicate external reality. Such a position not only contradicts Polanyi's view of reality but the purpose of his epistemological program. Polanyi made it clear on many occasions that his purpose was to rid us of the mistaken ideal of scientific detachment in order that we could again with freedom of thought believe in the revelations of art, of morality, and of religion. To make "verification" the critical criterion is to forget many principles intrinsic to Polanyi's epistemology.

The first lapse of Prosch's thought is his ignoring that Polanyi argued that even the integrations of science are integrations of incompatibles.¹⁶ The difference between "natural integrations" and "transnatural integrations" is not the element of incompatibles but the degree of effort needed to sustain them. "Transnatural integrations" do require a greater degree of effort, continuously, because they are of greater intrinsic interest to us as they compel comprehension of a universe of stratified realities and we are more involved in their meanings. This distinction leads to the second lapse, namely, forgetting the inherent risk in knowing. If the difference between verification and validation were as opposite as Prosch suggests, there would be little risk involved in scientific discovery. Polanyi, however, showed frequently that even science involved great risk in establishing the meaningfulness of its new ideas. The strain and suffering necessary for the achievement of new scientific insight have often been enormous. The third lapse follows from disregarding this inherent risk in all know-

ing, namely, not taking into account the a-critical framework of the cultures in which we learn and grow. Science is based upon metaphysical presuppositions of our civilization as Polanyi suggested early in his career in *Science, Faith and Society*. To pursue the truth about reality in our or any other culture requires an indwelling of its tradition and a commitment generally to its ideals. Therefore, the coherencies discerned by science and called "natural" are, in the final analysis, creative acts of imagination, too. Indeed, because they are imbedded in a cultural tradition, they do require so much less of us by way of attention once they are known and thus they seem much more stable; yet, they would collapse without the integrating framework of our beliefs.

Once again we come upon the unitive character of all knowing threatened by Prosch's contention that there is a sharp difference between science and religion. Here it may be helpful to remind us again of what Polanyi said in *Meaning*. "Science has most commonly been thought to deal with facts, the humanities with values. But since, in this frame of reference, values must be totally free from facts, the humanities have been thought to deal only with fancies. Values have thus come to be understood to be the product of fancy, not facts, and so not any part of factual knowledge."¹⁷ It would seem that such a fact and value separation is where Prosch's interpretation is leading in his dichotomizing Polanyi's two kinds of integrations.

Another way the continuity of knowing reality through tacit integrations, in science and in the various arts, can be seen in Polanyi is his use of the term "artificial" in *Meaning*. Polanyi observes: "But coherences that are thought by us to be artificial, not natural, have a difficult time being regarded and respected as real in our times, since (1) they seem to be creations of our own, not subject to external checks of nature—and therefore to be wholly creatures of our own subjective whims and desires—and (2) only tangible things are supposed to be real."¹⁸ With ironic force, Polanyi takes the term "artificial" and reverses its connotations by showing that it is in the very advantage of what we call "artificial" that art and, more solemnly, rites and ceremonies detach us from our ordinary everyday experiences and carry us away into meanings that give lasting significance to our lives.¹⁹ In this way, Polanyi has once again broken the false separation between the knowing of the natural and of the transnatural.

REALITY IN SCIENCE AND RELIGION

At this point my reply tends to be monotonous because of the temptation to show the many ways that Polanyi denied the sharp separation between the sciences and the humanities. It is necessary, therefore, to go on to another misunderstanding between myself and Prosch. As

quoted above, Prosch said that transnatural integrations can never have the same status ontologically as the natural realities aimed at in perception and science. We noted this claim in the context of Prosch's use of the criterion of verification where it seemed to mean that science had a superior ontological status. Such a position of superior ontological status for science is inconsistent with Polanyi's view of ontological levels. There are many ontological levels in Polanyi's theory of the emergence of human consciousness in the universe. Physical science in dealing with matter deals with lower conditions that allow higher operational principles, lying beyond physics and chemistry, to bring into being living organisms that in turn make possible the appearance of human life and thought. Paradoxically, it is this last level in which we now live that is ignored by the popular objectivist view of science. As Polanyi shows so thoroughly, it is the reality of thought itself that must be explained in our philosophy of science. A person who knows life is "life reflecting on itself."²⁰ There could be no science without the power of imaginative thought seeking the truth about reality. If we do not include within our ontology, the reality of levels higher than matter, we could not adequately account for a person who knows and does science. This fact means that in his epistemology Polanyi ultimately demonstrates not only that there is a dependence of our mental operations upon our bodily conditions but also that we cannot have civilization or science without the hierarchial subordination of lower levels of material existence to higher levels of intellectual, moral, and spiritual reality.

This hierarchial yet interdependent relation of the material and of the transcendent has been made especially clear in the way Polanyi related science and religion in *Personal Knowledge*.²¹ Here Polanyi states a reciprocal and mutual interaction of science and religion and sees benefits to both in the history of their conflicts and agreements. Polanyi describes how religion takes its raw material from secular experience, which of course includes the facts of science, and weaves from this data its own universe of meanings, guided by its distinctive religious experience. Such interaction means that both science and religion have needed and will need each other in their continual pursuit of reality. Polanyi writes: "Christianity is a progressive enterprise. Our vastly enlarged perspectives of knowledge should open up fresh vistas of religious faith. The Bible, and the Pauline doctrine in particular, may still be pregnant with unsuspected lessons; the greater precision and more conscious flexibility of modern thought, shown by the new physics and the locigo-philosophic movements of our age, may presently engender conceptual reforms which will renew and clarify, on the grounds of extra-religious experience, man's relation to God. An era of great religious discoveries may lie before us."²² In

Polanyi's hierarchy of reality, it is the transcendent obligations embodied in our moral and religious institutions that are more profound and true. Again the words of Polanyi himself speak most forcefully.

The book of Genesis and its great pictorial illustrations, like the frescoes of Michelangelo, remain a far more intelligent account of the nature and origin of the universe than the representation of the world as a chance collocation of atoms. For the biblical cosmology continues to express—however inadequately—the significance of the fact that the world exists and that man has emerged from it, while the scientific picture denies any meaning to the world, and indeed ignores all our most vital experience of this world. The assumption that the world has some meaning which is linked to our own calling as the only morally responsible beings in the world, is an important example of the supernatural aspect of experience which Christian interpretations of the universe explore and develop. . . . I shall show how we can arrive by *continuous* [emphasis mine] stages from the scientific study of evolution to its interpretation as a clue to God.²³

Polanyi does not reduce reality to the one level of natural integrations, but he envisions an ascending series of levels to which the fields of transnatural integrations contribute two things: beliefs that help sustain the pursuit of science, and the exploration of a wider range of reality embedded in and yet beyond the material level of reality.

Polanyi's view of reality is from the angle of the knower, not from that of the metaphysician speculating and defining the necessary principles for being. Edward Pols and others have criticized Polanyi for not giving an explicit metaphysics.²⁴ To Pols, it seems that the reality discovered by human knowledge should already be there waiting for discovery. This view seems less dynamic than that expressed in the language of Polanyi, who speaks of the attraction of reality as "alluring" and "beckoning" and of its manifestations as "promising" and "surprising." Nevertheless, Polanyi's metaphysical system is incomplete, and I would suggest that it is because Polanyi saw the knower more as a theologian sees the worshipper than as the speculative philosopher sees the thinker. For Polanyi, the human is always a finite being invited to the task of facing the mysteries of reality. The human is not able to conquer finally or to control fully the reality that is pursued. Instead the human knower is a servant to a calling, "a heuristic field," that is, confronted with the opportunity to explore reality and an obligation to accept it. The human person finally cannot fully comprehend reality but only surrender in service to it. At the highest level of this pursuit, Polanyi then describes our relation as more like that understood in the service of worship and in the Pauline paradigm of salvation by grace. Since Polanyi's intent for religion and God are in question, we must notice the following two passages from *Personal Knowledge*.

So far as we know, the tiny fragments of the universe embodied in man are the only centres of thought and responsibility in the visible world. If that be

so, the appearance of the human mind has been so far the ultimate stage in the awakening of the world; and all that has gone before, the strivings of a myriad centres that have taken the risks of living and believing, seem to have all been pursuing, along rival lines, the aim now achieved by us up to this point. They are all akin to us. For all these centres—those which led up to our own existence and the far more numerous others which produced different lines of which many are extinct—may be seen engaged in the same endeavor towards ultimate liberation. We may envisage then a cosmic field which called forth all these centres by offering them a short-lived, limited hazardous opportunity for making some progress of their own towards an unthinkable consummation. And that is also, I believe, how a Christian is placed when worshipping God.²⁵

The stage on which we thus resume our full intellectual powers is borrowed from the Christian scheme of Fall and Redemption. Fallen Man is equated to the historically given and subjective condition of our mind, from which we may be saved by the grace of the spirit. The technique of our redemption is to lose ourselves in the performance of an obligation which we accept, in spite of its appearing on reflection impossible of achievement. We undertake the task of attaining the universal in spite of our admitted infirmity, which should render the task hopeless, because we hope to be visited by powers for which we cannot account in terms of our specifiable capabilities. This hope is a clue to God, which I shall trace further in my last chapter, by reflecting on the course of evolution.²⁶

Seeing then that transnatural integrations lie at a higher ontological level, which thereby demonstrates that Polanyi certainly saw them as bearing on an external reality, we can enlarge our grasp of Polanyi's view of reality as one that invites all fields of knowing to exploration with results appropriate to their methods. Polanyi's conception of a society of explorers is one of "overlapping neighborhoods," and each field of inquiry from those that deal with perception to those that lift us beyond everyday experience contributes to our growing knowledge of reality. This view in no way leads to philosopher kings or theological queens, for it also recognizes that to the degree our personal participation increases there is a proportionate increase in the possibilities of truth and of error. There is in Polanyi's view, however, a judgment that the knowledge gained through transnatural integrations is richer and more revealing.

When Polanyi spoke of reality, he spoke of it in a very inclusive way, not confined to tangibles or to the levels of empirical verification. He defined reality as that which has the power to manifest itself in indeterminate and unexpected ways in the future.²⁷ The capacity of an entity to reveal itself in unexpected ways in the future is an indication that it is an aspect of reality "possessing a significance that is not exhausted by our conception of any single aspect."²⁸ This conception holds as much, perhaps more, for religion and theology as for perceptual observations and science. Polanyi regarded persons and problems

as more real than stones although stones are more tangible because in his definition of reality he attached more significance to persons and problems and their independence and power for revealing themselves in the future. Therefore Polanyi clearly challenges all levels of knowing to regard their pursuit as toward a comprehensive reality when he writes: "And since I regard the significance of a thing as more important than its tangibility, I shall say that minds and problems are more real than cobblestones. This is to class our knowledge of reality with the kind of foreknowledge which guides scientists to discovery."²⁹ The paradigm of discovery as unfolded by Polanyi becomes a model for all fields of knowing. This point leads to another of Prosch's objections.

Prosch says that: "Rather than regarding 'discovery' as both the keystone and the aim of Polanyi's thought, therefore, it might be safer simply to regard as his keystone that feature which is truly unique about his thought . . . the subsidiary-focal distinction."³⁰ I certainly do not disagree that this distinction is the fundamental principle in Polanyi's theory of knowledge. It is the principle that shows us the common structure in all knowing. But if we left this principle by itself, we would have failed to grasp the significance of what Polanyi has to say to all persons. Polanyi's aim was not to invent a new concept but to renew the moral and spiritual foundations of our culture. We have become a culture impoverished by the reduction of reality to tangibles, and we are unable to pursue our values and ideals because they are seen as unreal. It is only when even these values and ideals are seen in a heuristic field that we can overcome the problem of moral inversion. I think that the concept of discovery catches the genius of Polanyi's insights, because it suggests how he has shifted our attention on the nature of knowledge from the dichotomies of body and of mind to a phenomenology of knowing in action. Discovery, I think, carries the connotations of responsibility and of growth inherent in Polanyi's "post-critical" program.

Another way in which we see the larger framework that Polanyi presents for all knowing is through his picture of truth and universal intent. The general story of evolution shows, as mentioned above, myriad strivings toward a meaningful existence, each successive level constituted by a truer and deeper relation to reality. "All personal knowing," says Polanyi, "is intrinsically guided by impersonal standards of valuation set by a self for itself."³¹ The heuristic urge discerned in the prearticulate intelligence of our biosphere is seen in the way that living things seek to relate their personal pole to the more universal and external pole of reality. This principle in humans is seen in that our satisfaction is not in pleasing ourselves but in our establishing standards of excellence that can be shared with others as

contacts with reality. This universal intent is present through all forms of knowing. Particularly interesting in this respect is Polanyi's discussion of "visionary art" in *Meaning*. Visionary art is what Polanyi saw as an expression of the attack upon "the incoherencies of our social existence." Even though its "frame" detaches us from the more usual forms of representations in art, visionary art in its own creative way speaks to us about the conditions of modern existence and in this way bears its measure of truth. The truth of such works of imagination does indeed require a degree of indwelling that many would not venture. Nevertheless, we can respect a universal intent in the work of these artists.

FAITH LIBERATED FROM SCIENTIFIC DOGMATISM

This point brings us back again to Prosch's concern for verification. I suspect that he is afraid of being charged with subjectivity if we link universal intent in science with universal intent in religion. It is very clear that Polanyi saw an increase in our indwelling as we move from natural integrations to transnatural ones and from the self-centered to the self-giving. In the frame and story of myth and of religion, we do involve ourselves in a more complete way of surrender. Polanyi saw the reward of such greater indwelling as a way of obtaining truth that is of the highest value. The following quotation comparing the truth of visionary art and of religion shows this universal intent in transnatural integrations.

Visionary art has shown us that, even when the story content of the work of art quite obviously has *no* plausibility, it is nevertheless possible for our imagination to integrate these incompatible elements into a meaning—a meaning that cannot be expressed in any set of coherent, explicit statements, a meaning that is born and remains at the level of feeling but which is nonetheless a genuinely *universal* [emphasis mine] personal meaning and not merely a subjectively personal meaning.

To some extent, perhaps, and for some people, the meanings achieved in religion may be of this same sort. The contents may continue to seem completely implausible to us, while yet we see in the creation stories, the miraculous birth stories, the Crucifixion and Resurrection stories a meaning expressing the whole significance of life and the universe in genuine and universal feeling terms. Then we can say: It does not matter. If not this story exactly, then *something like this* is somehow true—in fact, is somehow the highest truth about all things.³²

Certainly Polanyi did not mean by the highest truth some personal subjective vision without ontological status even though it cannot be verified as we would in scientific observations.

The doubts of Prosch may arise from his unfamiliarity with theological language and conceptions. In the final section of his critique Prosch quotes from two unpublished lectures what he thinks is evi-

dence that Polanyi did not fully include religion in his conception of works of the imagination, namely, that "Polanyi indicated that by the 'transnatural' he did not mean the 'supernatural.'" Then Prosch quotes Polanyi as follows: "But here the question arises whether the transnatural powers which carry us away in a religious devotion only bring us to the threshold of religious faith. Must the transnatural be surpassed by the supernatural? . . . I am inclined to doubt it."³³ Prosch also quotes another unpublished manuscript.

The meaning which the Bible has and the ritual of religious service . . . may be deeply moving to us. It can be so, if we turn to it as an association of symbols. . . .

This meeting and this argument have made me think of the way I would wish to be buried . . . "Corruptible puts on incorruptible," "Death, where is thy victory?" I now realize how revealing such words are of our destiny even though there is no information given by them. And I can think now of the depth of my whole life being expressed by the words, spoken by the congregation on their knees, "Our Father, which art in heaven," and so on, though literally I believe none of the Lord's prayer.³⁴

In the first quotation, Polanyi does not find it necessary to have a third category called "the supernatural" in order to express the meaning of religious faith. His category of the transnatural is adequate to gather up the meanings of religion. In rejecting the older formulation Polanyi is also consistent with his position set forth in *Personal Knowledge* where he saw himself as allied with theologians such as Paul Tillich who were struggling against the supernaturalistic distortions of genuine revelation.³⁵ Polanyi is careful to say that he is not identifying his views with any particular theologian, but he also understands the danger of supernaturalism as being a literal factual assertion. Instead of expressing religious meaning as information, Polanyi calls for us to understand it in terms of the integration of incompatibles "that will have as their import the story of a fundamentally *meaningful* world."³⁶ It is also in this sense that I think we should understand Polanyi in the second quotation above. The meaning of his life and death are not adequately expressed in factual terms, but the Christian story of life, death, and eternal life gather up the meaning of it all.

In the spring of 1963 following a conversation several weeks earlier with Tillich, Polanyi gave a lecture at the Pacific School of Religion, "Science and Religion: Separate Dimensions or Common Ground?"³⁷ In this lecture, he responded to Tillich's then overly sharp separation of science and religion into separate dimensions that bypass each other rather than conflict. While very sympathetic on the whole to Tillich's purpose to distinguish between the factual character of science and the symbolic nature of religion, Polanyi wanted to show that science was neither exempt from doubt nor possible at all without the personal indwelling of the scientist. The lecture, therefore, set forth

the structure of tacit knowing and its universal applicability in including its applicability to science and religion. Having established this common ground between the two fields, Polanyi made the following comparison of his work with that of Tillich: "If this project succeeds, it would achieve a more satisfactory reconciliation of human convictions, than would the acknowledgment of strictly separate dimensions for science and religion. Instead of by-passing each other, the secular view of the universe and its religious interpretation would mutually reinforce each other. In a way, this enterprise would serve as a counterpart to Tillich's undertaking. He has fought for the purification of faith from religious fundamentalism; I would supplement this by purifying truth from scientific dogmatism."³⁸ With a fuller knowledge of Polanyi's concern for the relation and contribution of his thought to religion and to theology, I do not think Prosch would have misunderstood my contention that Polanyi invites theology as well as science to a heuristic enterprise. I did not say, as Prosch implies, that theology gets at reality better than science. Instead I asserted that theology was also challenged by Polanyi's heuristic philosophy to be a part of the joint enterprise and to do it in the dialogical and complementary way suggested by Polanyi in the above passage.

The evidence for religion and theology as a heuristic enterprise, I think, is now clearer. The central features of Polanyi's thought—the structure of tacit knowing, the personal and universal intent of all knowing, the levels of reality, the heuristic field, and a society of explorers—all place the responsibility for the pursuit of truth upon all knowers and forms of knowing. There is, however, one further step which Polanyi suggests. We can see that his conception of self-giving integrations as actions that carry us away allows for the divine-human encounter. Polanyi's word "surrender" is well chosen for it suits the greater indwelling that such religious experience demands. Before Polanyi had developed the concepts of self-centered and self-giving in *Meaning*, he had anticipated this insight in *Personal Knowledge*. "Religion, considered as an act of worship, is an indwelling rather than an affirmation. God cannot be observed, any more than truth or beauty can be observed. He exists in the sense that He is to be worshipped and obeyed, but not otherwise; not as a fact—any more than truth, beauty or justice exist as facts. All these, like God, are things which can be apprehended only in serving them."³⁹ With *Meaning*, Polanyi has added an explanation of how we enter into worship by an acceptance like that we grant to a work of art, except that it is more involving. Here he has gone as far as he could in suggesting how it is through this type of meaning that we are enabled to encounter the most comprehensive level of reality. Polanyi also has been wise in not making this surrender a matter of ordinary rational knowledge or *assensus*.

Instead, in *Meaning* he has left us as he has consistently done at the end of *Science, Faith and Society*, *Personal Knowledge*, and *The Tacit Dimension*, with the choice of a new way of understanding science that would open up to us again the possibilities of belief in the reality known through religion.

NOTES

1. Michael Polanyi and Harry Prosch, *Meaning* (Chicago: University of Chicago Press, 1975); Richard Gelwick, *The Way of Discovery: An Introduction to the Thought of Michael Polanyi* (New York: Oxford University Press, 1977). Harry Prosch's review of Richard Gelwick *The Way of Discovery* is in *Ethics* 89 (January 1979): 211-16. Because I had worked closely with Polanyi since 1962 and because I had discussed carefully the entire text of *Meaning* with him, which is acknowledged in the book, p. xiii, I was surprised at this difference of view between me and Prosch.

2. J. H. Oldham, *Life Is Commitment* (New York: Harper & Brothers, 1959), p. 36. In Prosch's reply to this paper in this *Zygon* issue, he quotes a letter to Oldham by Polanyi of May 31, 1948 where Polanyi states that "our meetings leave me increasingly with the feeling that I have no right to describe myself as a Christian." But Prosch has quoted this sentence out of context and misrepresented Polanyi. The context of this sentence, which is in the letter and is further amplified in several others that follow, concerns the discussion of Marxism from a sympathetic Christian view. It is not surprising that Polanyi, a strong anti-Marxist, had doubts about calling himself a Christian if he was expected to entertain a positive attitude toward Marxism! A full reading of the correspondence between Polanyi and Oldham until Oldham's death in 1969 discloses a long friendship in which they saw each other as allies in the struggle for faith and the affirmation of the reality of God. It is evident that Polanyi did not say in 1948 that he was not a Christian; what he was saying was, if he had to be sympathetic to Marxism, he was not sure that he could call himself a Christian.

3. Michael Polanyi, "The Scientific Revolution," *The Student World* 54 (1961): 287-302.

4. F. L. Cross (ed.), *The Oxford Dictionary of the Christian Church* (London: Oxford University Press, 1978), p. 566.

5. Richard Gelwick, "Discovery and Theology," *Scottish Journal of Theology* 28 (1975): 301-22; "Exploring Space and Theology," *Student World* 59 (1966): 388-98.

6. Prosch, p. 213.

7. Gelwick, *Way of Discovery*, pp. 101-2.

8. *Ibid.*, p. 107.

9. Michael Polanyi, *Personal Knowledge* (Chicago: University of Chicago Press, 1958), p. 202.

10. Prosch, p. 213.

11. Polanyi and Prosch (n. 1 above), pp. 74-75.

12. *Ibid.*, p. 68.

13. Michael Polanyi, "From Perception to Metaphor," in "Meaning: A Project by Michael Polanyi," lectures at the University of Chicago and University of Texas, February-May, 1969, p. 14.

14. Prosch, p. 213.

15. *Ibid.*, pp. 213-14.

16. Polanyi and Prosch, p. 125.

17. *Ibid.*, p. 64.

18. *Ibid.*, p. 67.

19. *Ibid.*, pp. 109-19.

20. Polanyi, *Personal Knowledge* (n. 9 above), p. 347.

21. *Ibid.*, pp. 283-86.

22. *Ibid.*, p. 285.

23. *Ibid.*, pp. 284-85.

24. Edward Pols, "Polanyi and the Problem of Metaphysical Knowledge," *Intellect and Hope*, eds. Thomas A. Langford and William H. Poteat (Durham, N.C.: Duke University Press, 1968), pp. 58-90.
25. Polanyi, *Personal Knowledge*, p. 405.
26. *Ibid.*, p. 324.
27. Michael Polanyi, *The Tacit Dimension* (Garden City, N.Y.: Doubleday & Co., 1966), p. 32.
28. *Ibid.*
29. *Ibid.*, p. 33.
30. Prosch (n. 1 above), p. 216.
31. Polanyi and Prosch (n. 1 above), p. 42.
32. *Ibid.*, p. 159.
33. Prosch, p. 215.
34. *Ibid.*
35. Polanyi, *Personal Knowledge*, p. 283. See also Paul Tillich, *Systematic Theology*, vol. 1 (Chicago: University of Chicago Press, 1951), pp. 64-65.
36. Polanyi and Prosch, p. 159.
37. Michael Polanyi, "Science and Religion: Separate Dimensions or Common Ground?" *Philosophy Today* 7 (Spring 1963): 4-14.
38. *Ibid.*
39. Polanyi, *Personal Knowledge*, p. 279.