

theology-in-context and
the doctrine of creation —
clues from the thought of Michael Polanyi:

The God of the Contexts

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Theology-in-context takes its rise when theological reflection is forced beyond the boundaries of its present clarities by involvement in the problematic of a given time and place which its own ethic finds necessary and compelling. This generates new transmutations of the gospel of Jesus the Christ, and demands an articulation of the possible usefulness of these in other contexts, both those simultaneously demanding attention, and those taking shape, but having yet to achieve their full contours. The theologies of liberation, which have developed in our time around the foci of racism, sexism, and classism/colonialism/imperialism, offer prime examples of the operation of theology-in-context. They are, however, not the only possibilities, for they converge, perhaps unexpectedly, with other efforts of human creativity to move beyond the limits of prior clarities. Skilled as they, of necessity, become in listening to the voices of the ontic realm, and dealing constructively with context in the development of their own reflection and action, they cannot deny the recognition of integrities of creativity with which they have an affinity at the point of imagination. For such a denial would undermine the cogency of their own creative efforts.

One of the truly striking things about the theologians of the oppressed is their recognition of the fact that Christians have no monopoly on the delineation of oppression. Theology-in-context, as it takes shape at the hands of the liberation theologians, thus finds itself continually stretched at the point of both hearing and contributing to dynamics in the context it neither originates nor controls. Accordingly, it learns not only to listen to voices other than those of the faithful, but also to labor alongside, and in concert with, disciplines other than theology. The liberation of creativity, which is the yield of theology-in-context, is the result of this willing immersion in the situation of the present.

Theology that knows the contextual liberation of creativity is intrinsically open-ended. Having embraced the chastening of its reflection, and the forward moving impulse that seizes its imaginative powers, it comes to recognize the operation of imagination wherever it is encountered. In so doing it hears unexpected voices in the ontic realm, bespeaking labors of quite different sorts. When these are the voices of the exact scientists, the contextual theologians encounter the possibility of an exercise of theological creativity that runs beyond the capacity of theological-ethical reflection. If *this* creativity is exercised even deeper radical choices than those that have been discerned so far come into view.

It has been the massive, monumental finding of much of the theology of the twentieth century, certainly in most of its regnant Protestant formations, that the cosmological question is incidental to the existential predicament of humanity, and therefore on the periphery of the contours of the faith that redeems. This will no longer suffice if the voices of the faithful among the exact scientists are heard. And if these voices are heard, theology-in-context is forced into a deepening, for the liberation of creativity it has unleashed cannot be restrained at this juncture any more than it can be contained at the manifold intersection points of faithful response to the gospel of Jesus the Christ with the struggles of the oppressed, throughout the world, for release from their captivity. Here the initially ethical impulse presses toward an even broader expression than we are to find in the figures, both distant and recent, who have shaped our theological life and work.

There is profound biblical warrant for attempting to traverse the route that now looms up before us. As beginning students of the biblical material quickly learn (or should), one of the most illuminating discoveries of biblical criticism was the insistence that the line of development in the Old Testament was *from* covenant *to* creation, not the reverse. The language of Genesis 1:1-2:4a must, of course, be understood in close connection with the opening chapters of Genesis at large, and, for that matter, with the whole of the Pentateuch. But it can never be plumbed apart from the fact that it reflects highly developed insights on either side of the Exile, thus assuming, in its own way, the immense creativity of the most erudite of the Old Testament writers, the author of the book of Job, and that of the anonymous prophet of the Exile, whom we know as the Second Isaiah. There lies behind the development of these insights, and hence also, behind Genesis 1:1ff., a centuries long, perhaps even a millenium-long, unfolding of the life of the covenant between Yahweh and Israel. Covenant was the base of Creation.

Precisely this same logic of development unfolds in the New Testament. On this side of the coming of Jesus of Nazareth, and the rise of faith in him as Jesus the Christ, the covenant was drastically intensified in its redemptive power, and expanded to include the Gentiles — it became *new*. The implications of this new revelation were necessarily pressed as far as the base of all reality in God's creative act, witness Colossians 1, and the prologue to the fourth gospel, the Gospel of John. Here too, then, Covenant is the base of Creation. In the Bible, faith in God the Creator is never argued on a theistic basis. It is rather the implicate of the relationship between God and his creatures, known only by his grace.

Such is the biblical background of the route we must travel now. The prime examples of theology-in-context are those which have taken their lead from the ethical impulse at the heart of theological reflection. This effort as a whole must be construed as an intensification of the demands of the covenant between God and his creature, men and women. In this mode, the confrontation of the predicament of the oppressed as having no basis whatsoever in God's intention for his creation evokes a radical new extension of the language whereby we think of God. He is our Liberator, our Companion in the struggle to right what humanity has wronged. What does it mean to move from covenant to creation in this light, in this key?

The realm of the created is the ontic realm. In the foremost ranks of those who struggle to understand it in all its varied respects stand the scientists. What all too many theologians do not know, including many of those in the ranks of the liberation theologians, is that developments in our own decades have moved us far beyond the impasse, so-called, between science and religion, in terms of which most of us have been programmed. This is the view that science and religion are two different spheres of reflection, that never the twain shall meet, that science has to do with fact, religion, with meaning, that theology can carry on its work comfortably ignoring the cosmological question while laboring to intensify the living out of redemption, the demands and the promise of the covenant.

Note well: the issue that now compels attention is not that of attempting to find some new theistic point of contact within the dynamics of post-modern science for the deepening of the theologies of liberation. The issue is, rather, of a quite different sort. It has to do with the *contextual responsibility* which theology-in-context manifestly seeks to embody. Our task is to describe an intersection between the kind of theological creativity emerging at the hands of the theologians of liberation, and that which is operating among those whose theological suggestions are indelibly colored by their respected involvement in the disciplines of the exact sciences. What emerges in these latter instances is an astonishing proclamation, shaped by rigorous participation in the struggle with the hard data of scientific inquiry. The God of whom theology-in-context speaks is the God of the contexts. This is why the faithful among the scientists must be heard.

Here those responsive to the depths of theology-in-context may have much homework to do, in order to track the conversation at hand. The distinction between modern and post-modern science turns on the epoch-making breakthroughs on the fronts of science and technology which human existence now presupposes on every hand: relativity, quantum physics, the post-Darwinian understanding of time, the struggle of a figure such as Pierre Teilhard de Chardin, the fact that we are on this side of Einstein as well as Freud and Marx, the fact that we are on this side of Werner Heisenberg — so that the crucial debate has to do with whether demonstrably inevitable indeterminacy in measurement bespeaks indeterminacy in nature itself, and so on, and on. Happily, incisive materials are at hand for those who need to do this homework, e.g. Barbour, 1971 and Schilling, 1973. (And it must be noted that those who, for any reason, would undertake the task of preaching would be well advised to observe closely the passion, precision, and lucidity with

which some scientists labor to communicate to the lay mind the intricacies of their findings.)

The central point to the transition from modern to post-modern science can be formulated sharply and succinctly. In the language of Harold K. Schilling (p.56), a superb example of the theologically imaginative among the exact scientists, the kinds of breakthroughs we have mentioned “represent not only additions to *what man knows* but changes in *the way he knows*, and in *the way he feels about, responds and relates to, the known and unknown.*”

Without doubt, the key figure with whom we must come to terms, in order to grasp what we have just heard Harold Schilling say, is Michael Polanyi (1891-1976). Born in Budapest, he studied at the university there, and in 1913 took his medical degree. During World War I he was a medical officer with the Austro-Hungarian Army, and found time in the midst of that chaos to carry on a significant correspondence with Albert Einstein. This led to the production of a thesis in physical chemistry, which was accepted in 1916; he won his Ph.D. in that field in 1917. In 1920 he was appointed to the Kaiser Wilhelm Institute for Fiber Chemistry. In 1923 he was promoted to full membership in the Kaiser Wilhelm Institute for Physical Chemistry. Ten years later, outraged over Hitler's policies, he resigned this position, and was immediately invited to a chair in physical chemistry at the University of Manchester, in England. He visited the Soviet Union in 1935-36, and carried on conversations with Bukharin. By 1939 he had become deeply involved in what for him was a long-lasting and central crisis, namely, that of the freedom of science. (These details from Gelwick: 32-37).

Richard Gelwick, whose *The Way of Discovery* (1977) is the first comprehensive introduction to Polanyi's thought, notes that from the very beginning of his university days Polanyi's interest in science was combined with philosophical and moral concerns (31). Gelwick's illuminating observation, showing how this combination of concerns deepened, is as follows:

Polanyi's scientific eminence, combined with his sense of social and philosophical responsibility, led him into serious dialogue with major thinkers. In 1939, Joseph Oldham, a distinguished ecumenical leader, invited Polanyi to join the company of other leading thinkers to discuss the basic questions facing our civilization. Numbered among this group called “The Moot” were Karl Mannheim, Sir Walter Moberly, T. S. Eliot, H. A. Hodges, Kathleen Bliss, A. R. Vidler, D. M. MacKinnon, and John Baillie. Apart from his personal experience as a scientist and thinker, Polanyi regarded the biannual meetings of this society as a major intellectual influence on his thought. (41)

This intertwining of scientific expertise with philosophical, social, ethical, and theological concerns brought about a most unusual arrangement in 1948 with the University of Manchester, which saw Polanyi exchange his chair in physical chemistry for one, free of teaching duties, in social thought (Gelwick: 42ff). This enabled him to carry out what had already begun in 1946, namely, the systematic development of his thought. Beginning in that year, when he was 55 years old, an immense unfolding of deepening creativity began to take

shape. The 1946 lectures at the University of Durham, under the title, *Science, Faith and Society*, gave an initial general outline of where he was going. In 1951-52 he gave the Gifford Lectures at the University of Aberdeen. These were published in 1958 under the title, *Personal Knowledge: Towards a Post-Critical Philosophy*, Polanyi's major work. Following this, a wide panorama of lectureships unfolded, in which his most attentive audience was to be found in the United States, though from 1960 on he was Senior Research fellow at Merton College, Oxford (Gelwick: 51). Against this backdrop came the slim, epitomizing volume, *The Tacit Dimension* (1966). Here he focused and deepened what he had already set out on the grand scale in *Personal Knowledge*. A few months before his death, on February 22, 1976, his last book, *Meaning*, was published, with the careful assistance of Professor Harry Prosch, of Skidmore College (in Saratoga Springs, New York). The heart of this work, the central eight chapters of it, reflects lectures he gave in 1969, 1970, and 1971, at the University of Texas and the University of Chicago.

This panorama of productivity demands the attention of all those concerned with theology-in-context. I should think that it is also of major significance for the scientific community. This is particularly the case when one examines its already demonstrable influence. A strong argument can be made for the claim that there is a straight line from Polanyi's labors to the widely read and debated work by Thomas Kuhn, *The Structure of Scientific Revolutions* (1962; second edition, 1970). (See Polanyi and Prosch: 56-57). And this work, in turn, has played a major role in bringing to fruition some of the most incisive writings so far on the new front of science and religion, viz., those of Ian G. Barbour, who is both Professor of Physics and Chairman of the Department of Religion at Carleton College (Northfield, Minnesota). Barbour's 1974 volume, *Myths, Models and Paradigms: A Comparative Study in Science and Religion*, is of major significance for the understanding of how science and religion in juxtaposition must be thought of now. We will take four steps across the terrain of Polanyi's reflections. The four clusters of ideas we will consider do not indicate the only possible route across the mountain range of his thought, but they do suggest both the depth and the reach of his central concerns.

I

The place to begin is with his key and controlling idea, that of "the tacit dimension". In the remarkable epitomizing volume under this title (1966) Polanyi sharply and lucidly focused what he had developed in massive detail in the Gifford Lectures, *Personal Knowledge* (1958). He set out his point of departure with these words: "I shall reconsider human knowledge by starting from the fact that *we can know more than we can tell* (1966: 4)." His initial example of this is striking:

This fact seems obvious enough; but it is not easy to say exactly what it means. Take an example. We know a person's face, and can recognize it among a thousand, indeed among a million. Yet we usually cannot tell how we recognize a face we know. So most of this knowledge cannot be put into words. (1966: 4)

Polanyi plays with this illustration, and arrives at a crucial clarification of the forcefulness with which he sees the point at hand. He takes up the answer that Gestalt psychology gives, and, at the same time, departs from it:

Gestalt psychology has assumed that perception of a physiognomy takes place through the spontaneous equilibration of its particulars impressed on the retina or on the brain. However, I am looking at Gestalt, on the contrary, as the outcome of an active shaping of experience performed in the pursuit of knowledge. This sharpening or integrating I hold to be the great and indispensable tacit power by which all knowledge is discovered and, once discovered, is held to be true. (1966: 6)

Throughout his writings Polanyi makes much of the idea of *Gestalt* (form, shape), but he insists that what is at stake in this idea is the “logic of tacit thought”, (1966: 6) and it is precisely this that he seeks to explore in this epitomizing volume.

The key to Polanyi’s basic insight has to do with his probing of the fact the movement from one level or layer of thought to the next one defies any simplistic explanation, for this movement is silent and imaginative in character. His vivid example of this is the game of chess:

The playing of the game of chess is an entity controlled by principles which rely on the observance of the rules of chess; but the principles controlling the game cannot be derived from the rules of chess. The two terms of tacit knowing, the proximal, which includes the particulars, and the distal, which is their comprehensive meaning, would then be seen as two levels of reality, controlled by distinctive principles. (1966: 34)

Now despite the fact that most of those involved in the conversation at hand know that, as someone has said, the fastest way to divert a young mind into oblivion is just to show it the moves of the chess pieces, they also know that glorious moment when their own sons or daughters beat them on the chess board — the moment, that is, when the leap has been made from fascination with how the pieces move to preoccupation with the whole board, and close attention with spaces on which pieces have not yet been placed. And those whose vocation involves teaching quickly assent to the fact that there is no way other than participation in the struggle of the game itself to move from one level to the next.

Polanyi gives an even more illuminating example of the operation of tacit knowledge, namely, the giving of a speech. Here, too, levels are involved. Attend closely the following extensive formulation:

The giving of a speech includes five levels: namely the production (1) of voice, (2) of words, (3) of sentences, (4) of style, and (5) of literary composition. Each of these levels is subject to its own laws, as prescribed (1) by phonetics, (2) by lexicography, (3) by grammar, (4) by stylistics, and (5) by literary criticism. These levels form a hierarchy of comprehensive entities, for the principles of each level operate under the control of the next higher level.

The voice you produce is shaped into words by a vocabulary; a given vocabulary is shaped into sentences in accordance with grammar; and the sentences can be made to fit into a style, which in its turn is made to convey the ideas of literary composition . . .

. . . the operation of a higher level cannot be accounted for by the laws governing its particulars forming the lower level. You cannot derive a vocabulary from phonetics; you cannot derive the grammar of a language from its vocabulary; a correct use of grammar does not account for good style; and good style does not provide the content of a piece of prose. We may conclude then quite generally . . . that it is impossible to represent the organizing principles of a higher level by the laws governing its isolated particulars. (1966: 35f).

Thus, to use his own marvelous way of putting it, the clue to knowledge, all knowledge, is the fact that we know more than we can tell. And we are always under way pursuing what that more-than-we-can-tell is, so that we can tell about it, and even then discover that we know more than we can tell. Hence, the "crucial question", which embodies Polanyi's passion:

The declared aim of modern science is to establish a strictly detached, objective knowledge. Any falling short of this ideal is accepted only as a temporary imperfection, which we must aim at eliminating. But suppose that tacit thought forms an indispensable part of all knowledge, then the ideal of eliminating all personal elements of knowledge would, in effect, aim at the destruction of all knowledge. The ideal of exact science would turn out to be fundamentally misleading and possibly a source of devastating fallacies. (1966: 20)

It is precisely this kind of curiosity that informs the history of science, and the history of theology — for that matter, the history of all thought. Breakthroughs occur when and where men and women become curious about the shaping of a new problem. Indeed, the pay-off in Polanyi's line of reflection has to do with his probing of the meaning of a genuine problem. Thus,

. . . to see a problem is to see something that is hidden. It is to have an intimation of the coherence of hitherto not comprehended particulars. (1966: 21)

For Polanyi, the tacit dimension has to do, in so many words, with tracking the intimations of hitherto unseen, unrecognized coherences. To be committed to the search for the new problem, however, is to be committed to the inexhaustible replication of the functioning of this very dimension:

It appears, then, that to know that a statement is true is to know more than we can tell and that hence, when a discovery solves a problem, it is itself fraught with further intimations of an indeterminate range, and that furthermore, when we accept the discovery as true, we commit ourselves to a belief in all these as yet undisclosed, perhaps as yet unthinkable, consequences. (1966: 23)

Thus the real enemies of creativity are exposed. They are not those who think they can tell all there is to tell, or who think they know all there is to know. They are rather those who think that they *can* tell all they know. Whether one is speaking of science or religion — whether one is speaking of physics, or chemistry, or biology, or mathematics, on the one hand, or theology, or the philosophy of religion, or the phenomenology of religion, or the history of religions, on the other hand, it is relatively simple to deal with those who think they know all there is to tell. The difficulty is not with them. It rather lies with those who think they can tell all they know, for when they have told all they know, they are no longer capable of recognizing the advent of the new breakthrough, for they are convinced that there is nothing more to say.

II

The idea of the tacit dimension, which we have now sketched in outline form, pervades the whole of Polanyi's writings. Our second step has to do with making more explicit how Polanyi saw it operating *in science*. In one of the early chapters of *Meaning*, building on two articles he had written in the 1960's, Polanyi flatly asserted that the method of science "is not that of *detachment* but rather that of *involvement*." (63) This contention receives one of its most memorable expressions in the midst of the Gifford Lectures, *Personal Knowledge*, where he speaks of *heuristic passion*:

Scientists — that is, creative scientists — spend their lives in trying to guess right. They are sustained and guided therein by their heuristic passion. We call their work creative because it changes the world as we see it, by deepening our understanding of it. The change is irrevocable. A problem that I have solved can no longer puzzle me; I cannot guess what I already know. Having made a discovery, I shall never see the world again as before. My eyes have become different; I have made myself into a person seeing and thinking differently. I have crossed a gap, the heuristic gap, which lies between problem and discovery. (1962: 143)

Now the point to this remarkable paragraph is that since discovery changes the interpretative framework within which knowledge is discussed, "it is logically impossible to arrive at these by the continued application of our previous interpretative framework." Thus, "discovery is creative, in the sense that it is not to be achieved by the diligent performance of any previously known and specifiable procedure." In his marvelous way of putting the matter, "Originality must be passionate". (1962: 143) That is what he means by insisting that the method of science is not one of detachment, but of involvement. It is also why the subtitle of the Gifford Lectures is "Towards a Post-Critical Philosophy." In confronting a basically Kantian notion informing the prevailing idea of utter detachment in scientific inquiry, Polanyi contends for the view that without commitment there can be no science, and, even more trenchantly, that such commitment, being personal, transcends the disjunction between subject and object. His pivotal formulation of this reads as follows:

In so far as the personal submits to requirements acknowledged by itself as independent of itself, it is not subjective; but in so far as it is an action

guided by individual passions, it is not objective either. It transcends the disjunction between subjective and objective. (1962: 300)

What we are looking at here is the fruition of the basic point of departure of the Gifford Lectures as a whole, viz., Polanyi's contention that the act of knowing always involves what he calls "an appraisal", that intimately involves a "personal coefficient, which shapes all factual knowledge," in the very act of bridging "the disjunction between subjectivity and objectivity." (1962: 17)

This contention was, and remains, controversial. One of the choice illustrations of it is his assertion at the outset of the Gifford Lectures that the going textbook version of the relationship between the Michelson-Morley experiment in 1887 and Einstein's announcement of his special theory of relativity in 1905 is misleading. As is commonplace knowledge among those who know their way around the history of science, the Michelson-Morley experiment did not find what it expected to find, namely, a demonstration of the influence of the rotation of the earth on the measurement of the speed of light. The textbook suggestion is that Einstein, confronted with this, came up with the special theory of relativity to explain it. Building on a remark in Einstein's autobiography, and gaining explicit verification of the matter from Einstein himself in 1954, Polanyi contended that "the Michelson-Morley experiment had a negligible effect on the discovery of relativity." (1962: 10-11). The whole idea that "absolute rest is not observable" (1962: 11) had arisen earlier. Why, then, the received version in the textbooks? Polanyi argues that this simply serves a prejudiced view of the objective relationship between hard data and the discovery of new theoretical possibilities:

The usual textbook account of relativity as a theoretical response to the Michelson-Morley experiment is an invention. It is the product of a philosophical prejudice. When Einstein discovered rationality in nature, unaided by any observation that had not been available for at least fifty years before, our positivistic textbooks promptly covered up the scandal by an appropriately embellished account of his discovery. (1962: 11)

Now we must leave to the historians of science the resolution of this particular matter, though it should be noted that Robert Gelwick, in his introduction to Polanyi's thought, indicates independent corroboration of Polanyi's contention. (Gelwick, 1977: 27). However that may be, with reference to the issue of the passionate character of originality, and the fact that once the heuristic gap has been crossed there is no way back to a prior confusion, the illustration at hand is fascinating, for whichever came first, Einstein's special theory of relativity *does* explain the unexpected yield of the Michelson-Morley experiment! (See Durell 1956: 1107-1143) In saying this one is inexorably drawn in the direction of Polanyi's truly central concern, namely, the question of the transmission of scientific curiosity. In the epitomizing 1966 volume he arrived at a crystallized conclusion: "... the transmission of knowledge from one generation to the other must be predominantly tacit." (1966: 61) His key illustration of this is drawn from science:

Scientific tradition derives its capacity for self-renewal from its belief in the presence of a hidden reality, of which current science is one aspect, while other aspects of it are to be revealed by future discoveries. Any tradition fostering the progress of thought must have this intention: to teach its current ideas as stages leading on to unknown truths which, when discovered, might dissent from the very teachings which engendered them. (82)

Thus it is not detachment, it is commitment to the search for unknown truths that is at stake in the transmission of scientific curiosity, from one generation to the next, and it is in this sense that *belief* is a key word for scientific integrity. He put this concisely in *Personal Knowledge*:

To believe something is a mental act: you can neither believe nor disbelieve a passive experience. It follows that you can only believe something that might be false. This is my argument in a nutshell . . . (313)

III

Our third step is at hand. It is probably self-evident that what Polanyi sees in terms of science is applicable to all facets of human curiosity and inquiry, but we must ponder carefully the manner in which this is so, for the full range of its implications is of more than self-evident significance.

The tacit dimension is *ontic* in character. It has to do with that which is logically demonstrable and observable in the process of science at work. Accordingly, it is to be expected to be manifest wherever human inquiry breaks beyond the barriers of prior clarities. In that all integrations are personal, in his sense of the tacit dimension, it follows that "The understanding of science we have achieved . . . enables us to see that the study of man in humanistic terms is not unscientific . . ." (1975: 63f) Indeed, Polanyi, in this light, is perfectly willing to speak, on occasion, of "a world view based fundamentally on science," (1975: 105) providing that one is very clear that the myth of detached objectivity is not connoted by the word "science". In the lecture informing the central chapters of *Meaning* he is willing to specify this emphatically:

All empirical observation rests ultimately on the integration of subsidiaries to a focal center. All such integrations — from perception to creative discoveries — are impelled by the imagination and controlled by plausibility, which in turn depends upon our general view of the nature of things. (1975: 144)

Clearly, this "general view of the nature of things" presupposes the intrinsic open-endedness of all human inquiry and curiosity. Is there any sense, for Polanyi, in which this open-endedness is disciplined? In terms of what we have just heard him say, the functioning of imagination is controlled by plausibility. How does this "control by plausibility", so to say, unfold? Polanyi's considered response to such a question has to do with what he calls "the principle of mutual control." (1966: 72) Here he builds, once again, on

his experience as a functioning scientist. The simple fact is, he argues, "that scientists keep watch over each other. Each scientist is both subject to criticism by all others and encouraged by their appreciation of him." (1966: 72) Now the obvious trouble is that the full range of scientific inquiry contains both a nearness and a distance; no one knows everything, or even enough about everything to be able to exercise a direct kind of supporting critique and encouragement.

It is clear that only fellow scientists working in closely related fields are competent to exercise direct authority over each other; but their personal fields will form *chains of overlapping neighborhoods* extending over the entire range of science. It is enough that the standards of plausibility and worthwhileness be equal around every single point to keep them equal over all the sciences. (1966: 72)

This is how what he calls "a mediated consensus between scientists even if they cannot understand more than a vague outline of each other's subjects" (1966: 73) takes shape. The community of this mediated consensus is what Polanyi memorably calls "a society of explorers". (1966: 83) In many ways this intimates the excitement and reach of his suggestions at large.

A society of explorers is one in which the mediated consensus is open to the continual search for the hidden meaning, the emerging problem, the unexpected overtone, the surprising breakthrough, the heuristic gap. In terms of the language we are becoming accustomed to using in working through Polanyi's thought, the society of explorers is that company in which those who tell that they know more than they can tell come to anticipate knowing what they did not know before.

Mutuality, respect, freedom — these are the concomitants of a society of explorers so described. The breadth of Polanyi's vision is one which cannot be restrained at the boundaries of scientific inquiry. In countless ways he indicates this throughout the whole of his writings. One of the most memorable and incisive of these is the following conclusion in the midst of the Gifford Lectures:

(Man) is strong, noble and wonderful so long as he fears the voices of (his) firmament, but he dissolves their power over himself and his own powers gained through obeying them, if he turns back and examines what he respects in a *detached* manner. Then law is no more than what the courts will decide, art but an emollient of nerves, morality but a convention, tradition but an inertia, God but a psychological necessity. Then man dominates a world in which he himself does not exist. For with his obligations he has lost his voice and his hope, and been left behind meaningless to himself. (1962: 380. My italics)

IV

The passage just noted points to the fourth, and final, step across the terrain of Polanyi's thought. This has to do with discerning the theological yield of his

line of reflection. Clearly, his openness to human creativity as it moves beyond prior clarities cannot be restrained at this point, any more than it can be foreclosed anywhere else when reflection manifests the tacit dimension. In the Gifford Lectures he was willing to say that "An era of great religious discoveries may lie before us." (1962: 285). This kind of remark, however, always carries with it the overtone of conviction, not apologetics, in the older, classical sense of the term. He does not make a case for religion. He rather suggests its possibility — and this always in a carefully controlled, quite precise, fashion. We can discern this controlled conviction in his last book:

The religious hypothesis, if it does indeed hold that the world is meaningful rather than absurd, is . . . a viable hypothesis for us. There is no scientific reason why we cannot believe it. But to find no scientific reason why we cannot believe it is not to believe it . . . (1975: 179)

The reasons behind this assertion are set out with admirable precision:

Religious meaning . . . is a transnatural integration of incompatible clues and is achieved through our dwelling in various rituals and ceremonies informed by myths. These must, of course, be specific rites and myths — not just rites and myths in general. There are no such things. Religion "in general" is thus not religion, just as language "in general" is not language. To be religious we must have a religion. (1975: 179)

This conviction and precision combine to intimate the fact that, at root, Polanyi's theological suggestions are profoundly confessional in character. In the context of his last lectures he could say something that is true of his reflections as a whole:

. . . this present work is not directed toward effecting conversions to any religion. At the most, it is directed toward unstopping our ears so that we may hear a liturgical summons should one ever come our way. (1975: 180)

On occasion Polanyi gives striking indications of the liturgical summons he has heard, but he does so in a way which never breaks faith with the ontic character of his thought. The choicest demonstration of this occurs when one juxtaposes two passages, dead center in the argument of the Gifford Lectures.

Polanyi is never quite so eloquent as he is when he explores the question of the emergence of a new problem. Indeed, as we can now say on our own, to be a thinker in any discipline is to be tracking emerging problems. Listen to him, at a cardinal moment in his discussion, one in which he is preaching, not a religious gospel, but enthusiasm for that heuristic passion of which we have heard him speak. (And we must be alerted, as we take up this passage, that the citation with which it culminates is drawn from a mathematician, G. Polya, whose works, the 1945 volume, *How to Solve It*, and the two-volume work of 1954, *Mathematics and Plausible Reasoning*, (cf 1962: 127) had been summoned by Polanyi into his own argument shortly before the following lines.)

Obsession with one's problem is in fact the main-spring of all inventive power. Asked by his pupils in jest what they should do to become 'a

Pavlov', the master answered in all seriousness: 'Get up in the morning with your problem before you. Breakfast with it. Go to the laboratory with it. Eat your lunch with it. Keep it before you after dinner. Go to bed with it in your mind. Dream about it.' It is this unremitting preoccupation with his problem that lends to genius its proverbial capacity for taking infinite pains. And the intensity of our pre-occupation with a problem generates also our power for reorganizing our thoughts successfully, both during the hours of search and afterwards, during a period of rest.

But what is the object of this intensive preoccupation? How can we concentrate our attention on something we don't know? Yet this is precisely what we are told to do: 'Look at the unknown!' — says Polya — 'Look at the end. Remember your aim. Do not lose sight of what is required. Keep in mind what you are working for. *Look at the unknown. Look at the conclusion.*' No advice could be more emphatic. (1962: 127)

Now it is exactly this passion for involvement with the problem that informs — literally informs — Polanyi's version of the gospel itself. Remember now — no religion in general; remember now — hearing a liturgical summons if one happens to come our way; and remember now — the citation from Polya; then hear this:

Christian worship sustains, as it were, an eternal, never to be consummated hunch, a heuristic vision which is accepted for the sake of its unresolvable tension. It is like an obsession with a problem known to be insoluble, which yet follows, against reason, unswervingly, the heuristic command: 'Look at the unknown!' Christianity sedulously fosters, and in a sense permanently satisfies, man's craving for mental dissatisfaction by offering him the comfort of a crucified God. (1962: 199)

One would be hard pressed indeed to find a more incisive formulation of the heart of the gospel, in the whole history of Christian thought, than these words. But they are bought with a price. The problems at which Polanyi initially looked were scientific, and the epistemology for which he contends is ontic, so that the version of the gospel he proclaims carries with it the overtones of the natural. It is covered over with the indelible marks of inquiry into the only world we know — the *natural* world, which faith *confesses* to be *created*. As is the case with any scientist worth her or his salt, the issue of evolution is for Polanyi beyond debate, but, he argues, it has been misconstrued: "Darwinism has diverted attention for a century from the descent of man by investigating the *conditions* of evolution and overlooking its *action*. Evolution can be understood only as a feat of emergence." (1962: 390) With this in mind we are able to discern how deeply intertwined are science and faith in the personal knowledge of this remarkable man, who knew more than he could tell. But his way of telling this points beyond itself in a fashion that must seize the attention, and the imagination, of any theologian who would plumb the depths of theology-in-context. The last paragraph of the Gifford Lectures is unforgettable:

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 endeavour 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. (1962: 405 my italics)

The theologies of liberation are the prime exemplifications of theology-in-context in our time. In the work of this remarkable scientist they encounter an astonishing parallel to their struggle to move beyond prior clarities in the name of that passion that will not rest until all God's children are free. The fact is that a deepening convergence has set in. The context has been broadened to include the *cosmic reach* of the liberating impulse of faith.

What, we asked, does it mean to go from covenant to creation *now*? With Polanyi's efforts before us something of the beginnings of an answer to that question is at hand, and in knowing that we know more than we can tell about it we hear the heuristic summons to new effort on the part of a theology-in-context which is ethically *and* cosmologically construed. We are now ready to follow out this hunch: It may be the case that western Christianity has never been able to proclaim the depths of the gospel in a non-western world for precisely the same reason that its proclamation increasingly lacks cogency in the post-modern West itself — it lacks a theology of the natural. The issue is not creation in general — it never has been, from the biblical beginnings on. The issue is rather, How do those who know the comfort of a crucified God, of which *Polanyi* speaks, confess their faith by saying that the natural world is the world of creation, whose Creator intends that all his children shall be free? Nothing less than the liberation of creation is at stake when the liberation of creativity has been won. To make good this claim we must examine the points at which our own theological traditions are stretched into as yet only emerging possibilities. As we do so we shall discover that St. Paul was right — it is the whole creation that groans in travail, awaiting with eager longing the ultimate liberation. (Romans 8:19 ff.)

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