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The Future of Convivium. Members of Convivium may be surprised to learn that, for the time being at any rate, Convivium will not be amalgamating with the Science and Religion Forum News and Reviews. The decision not to go ahead with the merger came, not from the S.R.F. which agreed at their Durham conference to incorporate Convivium into their newsletter, but from a group of Convivium subscribers who happened to be together in Oxford at the H.E.G. conference in April. In view of their unexpected but strong feeling that it would be a mistake to merge at present and risk losing our identity and distinctive contribution, I felt bound to convey this decision to the S.R.F. After consultation with colleagues, the secretary wrote back that they understood our position and that the matter could still be looked at sympathetically, should we wish, at some future date to open up the question again.

In the meantime, I have invited Dru Scott, Robin Hodgkin, John Puddefoot and Geoffrey Price to form a small ad hoc committee to act as an editorial and trustee group. This will give me someone to consult when policy is in question. This means that, for the moment, we carry on as we are, but I regard it as an interim situation. We have about sixty subscribers, including six new ones since March, but a few continue to disappear from the mailing list, when we have heard no more after two years. The alternative to some kind of merger is to expand. Several people have spoken to me of the need in Britain for a journal which would serve the kind of purpose here that Zygon serves in the U.S.A., though it would need to be less expensive. If Convivium is to be developed, we need to find one or more suitable persons, preferably with a university base, to take on editorial responsibility. What we want is, of course, not a journal about Michael Polanyi, but one which aims to apply to current issues the stream of thought he represented in his day. Even I, who am no scientist, am aware of important developments in the philosophy of science. Talk of field-structures and the use of field imagery is increasingly used in ways foreseen by Polanyi. One thinks of works like The Holographic Paradigm which explores "the leading edge of science" (Ed. Ken Wilbur), of David Bohm's Wholeness and the Implicate Order or Rupert Sheldrake's The New Science of Life. In philosophy, theology and education, the real growing points also seem to be those in which Polanyian ideas can be discerned, whether Polanyi himself exerted an influence or not. For example, the most recent Polanyi Newsletter from the U.S. has an article entitled Polanyi and Barfield: Complementary Theorists, written by Richard Hocks, who finds interesting parallels between Owen Barfield's thought and that of Michael Polanyi. All this and much more would suggest that, in the right hands, Convivium could fulfil an important need. Perhaps we are right to think about expansion rather than a self-effacing merger. In the meantime, we must keep going and do what we can to increase our circulation. We could really do with a 'promotions officer' for a time, someone who would make
It their special concern to send out complementary copies to key people, arrange for copies to be displayed at conferences, and generally look for ways of giving it publicity. Perhaps reading this will prompt you to think of someone who could do this! In the meantime, Robin Hodgkin has initiated a bit of 'promotion' himself. Some of you may have seen the advertisement which appeared in the Times Lit. Sup. and the Times Higher Ed. Sup. on October 14th. This is due to Robin's initiative and generosity. It is hoped that this may help to increase the circulation of Convivium which, as Robin says, with some justification, should now be described as a "twice yearly critical mini-journal" rather than a newsletter. The advert will appear again in April, 1984. You will also, I hope, notice the improved appearance of this Number of Convivium. We have, at the moment, a healthy balance at the bank and it was felt that the money should partly be spent on typing. This knocks the cost of producing Convivium up to considerably more than the minimum subscription, but there are still some very generous subscribers who make it possible for us to keep a minimum subscription of £2.

Before leaving the subject of Convivium's future, I would like to mention that the secretary of the American Newsletter, Richard Gelwick, is very appreciative of our efforts and interested in its development. The two newsletters already exchange material, and Richard and I have been discussing ways of doing this more effectively. In the last American Newsletter, Convivium had some unsolicited publicity, as a result of which we already have one new member from the U.S.A. Unfortunately, there is no room in this Number of Convivium to include seven pages of details of dissertations which explicitly refer to Michael Polanyi in their title, which Richard Gelwick has compiled as a first step in a computer storage programme that will keep a record of Polanyi bibliography. I will include this in the March Convivium, 1984. I am also holding over several articles from the Polanyi Newsletter (Vol. X No. 2 Winter 1983).

Correspondence Column. As you will see, we now have a correspondence column, started by a subscriber who has sent me her ideas for the future of Convivium. I hope this will encourage others of you to write and air your views. I hope to be able to print a selection of them in March, 1984.

The Michael Polanyi Visiting Lectureship, North Carolina University. Dr. Magda Polanyi has passed on to me two cuttings from the Chapel Hill Newspaper, reporting that Dr. Waldo E. Haisley Jr., Prof. Emeritus of Physics at North Carolina University, has given the University $20,000 to endow a biennial lectureship in the history and philosophy of science. Dr. Haisley established the Polanyi Visiting Lectureship because he was concerned that scientists have become so preoccupied with their research specialities that they sometimes lose sight of science's larger aims. He says, "I named the Lectureship in Polanyi's honor because of his great influence on scientists and philosophers and because of the personal benefit I have received reading his work, listening to his lectures and talking with him during his year of residence at Duke University."
The second cutting reports that Dr. Freeman J. Dyson, a distinguished theoretical physicist from Princeton N.J., had been chosen as the first Polanyi Lecturer.

The Joseph Regenstein Library. Richard Allen has undertaken to see whether this library will allow us to publish some of Polanyi's unpublished papers in Convivium.

In this Number of Convivium is a brief account of the Higher Education Group's conference held earlier this year in Oxford on the theme of Reductionism. One of the papers was given by Robin Hodgkin, who has kindly allowed part of his talk to be reproduced here. There is also an interesting summary of the nature of reductionism in Michael Polanyi's own words, sent to me by Prof. Roy Hiblett. Prof. Echeverria sent me, through his Dutch publishers, a copy of his new book for review in Convivium. We are indebted to John Puddefoot for a masterly, critical review. Here also is the long awaited review of the ZYGON special Number on Polanyi by Richard Allen as well as an interesting article by him on Collingwood and Polanyi.

LETTERS TO THE EDITOR

Dear Editor,

It is clearly necessary to explore, as you are doing, the possibilities of merging Convivium with another journal. Necessary financially, since our present position is precarious, and necessary in terms of subject and scope. I am sending you some comments on the latter.

So far, the material of this journal has been chiefly intensive, concerned either with Interpretations of Michael Polanyi's writing or with the application of his ideas to adjacent fields of thought. It is now time, I think, for our themes to become more extensive, partly because it could have been no party of Polanyi's intention to generate anything resembling a cult.

Our studies cannot, however, be infinitely extensive: the limits of extension need to be defined, or the originating impulse of Polanyi's thought will be lost. At the same time, it would be a pity to become merged with a journal professedly concerned with science or religion, since the central message of Polanyi - the personal and heuristic nature of knowledge - is not confined to either.

Any merger should involve a redefinition of purpose for both journals, and care must be taken to preserve the 'Polanyi' element, which, if we are not careful, could diminish to vanishing point within a few years. But if your explorations are successful, I can see a fruitful development of the principle of the conviviality of thinkers.

Finally, I suggest that it is a mistake to think of Convivium as a newsletter. We should regard ourselves as a small society existing for the purpose of sharing and exchanging ideas, with Convivium as our means of communication.

Yours sincerely,
Frances Stevens
Heybrook Bay, Plymouth.
In this paper I propose to consider R.G. Collingwood's theory of Absolute Presuppositions (hereafter "A.P.'s") and to suggest that deficiencies in it are in fact remedied by Polanyi's own account of ultimate beliefs and the tacit dimensions of all knowing.

Both Collingwood and Polanyi stood aside from the critical tendency which has dominated modern philosophy from Descartes and which has tried to reconstruct all or some of what we ordinarily claim to know upon what it regards as secure and incorrigible foundations, such as clear and distinct ideas, a priori insights and axioms, atomic and purely passively received sense-data or impressions, or precise measurements from objective instruments and tests. Both argued that what used to be called 'first principles' cannot be critically tested and justified but must be acritically accepted. But Collingwood's account of A.P.'s appears to entail a Relativist position in respect of them, from which only an account of our tacit power to modify them, can deliver us.

I shall briefly summarise Collingwood's account of A.P.'s and shall leave aside many of the difficulties which, rightly or wrongly, it has been said to encounter. (See the articles in Critical Essays on the Philosophy of Collingwood, ed. Krauz, London, O.U.P., 1972). I shall also ignore the logic of question and answer, and its difficulties, which precedes it, save only to mention now that, according to it, every statement is such and has meaning only as an answer to a question. Now questions contain presuppositions which are either relative or absolute. A relative presupposition is 'one which stands relatively to one question as its presupposition and relatively to another question as its answer'. In contrast, an A.P. is 'one which stands relatively to all questions to which it is related, as a presupposition, never as an answer'. Thus, in accordance with Collingwood's logic of question and answer, an A.P. is never a proposition or a statement, since propositions or statements are as such answers to questions, and are thereby true or false. A.P.'s cannot be true or false (Essay on Metaphysics, pp. 29-32 - hereafter 'EM').

As stated above, this account gives rise to serious difficulties: an A.P. may be such in one enquiry or for one thinker, but only relative in or for another; some A.P.'s discussed by Collingwood appear to have their own presuppositions, and thus could be answers to questions (e.g. the principle of the conservation of matter presupposes the existence of matter and as an answer to, 'Does matter have a continuous or intermittent existence?'). I shall leave these aside and consider only the question of their not being true or false, their acritical character and the way in which they change.
(i) The apparent motive for Collingwood's assertion that A.P.'s are neither true nor false was a desire to by-pass Positivist objections to metaphysics by agreeing so far with them, while yet reserving a sphere for a reformed metaphysics as the study of the A.P.'s which have been made or formulated in the past. This study would be valuable, because A.P.'s, although neither true nor false, have a logical efficacy. Collingwood explicitly stated (EM p. 32) that truth and falsity do not apply to A.P.'s, yet later (EM pp. 97-8) found some to be false. This contradiction in his view of A.P.'s perhaps follows from his awareness that 'presuppose', like 'assume', is elliptical and normally means 'presuppose to be true'. When he mentioned the possibility and usefulness of arguing from suppositions known to be false or as to whose truth we are ignorant (EM p. 28), he forgot that in so doing we reason as if we held them to be true and so give them a pretended or provisional assent. In accepting or rejecting the conclusions of such arguments, we accept or reject, respectively, the assumptions and presuppositions made in them: that is, we endorse them as true or reject them as false. Collingwood thus failed to avoid the Positivist challenge by his distinction between 'pseudo-metaphysics' which inquires about the truth of, evidence for and possibility of demonstrating A.P.'s, and genuine metaphysics which asks only who made or formulated them, and when.

(ii) Collingwood suggested that A.P.'s are usually implicit and not explicit, and thus that metaphysicians have formulated the otherwise tacit A.P.'s of the science of their times. Ordinarily A.P.'s operate in the dark and not in the light of consciousness (EM p. 43). Their exposure makes one feel uncomfortable (EM pp. 31, 44), since one's fundamental commitments are under scrutiny and they stand without any foundation. We cannot confirm ourselves in them by "proving" them; it is proof that depends on them, not they on proof. The only attitude towards them that can enable us to enjoy what they have to give us (and that means science and civilization, the life of rational animals) is an attitude of unquestioning acceptance. We must accept them and hold firmly to them; we must insist on presupposing them in all our thinking without asking why they should be thus accepted' (EM p. 173). Contrary to all the assumptions of critical philosophy, in its Rationalist and Empiricist forms, all our knowing rests upon tacit and acritically accepted foundations. An A.P. cannot 'be undermined by the verdict of "experience", because it is the yard-stick by which "experience" is judged' (EM pp. 193-4). He gives the example of a people who do not believe in death by natural causes, and of a hypothetical tribe who believe that all events are the result of magic. No events could shake these beliefs which are those people's fundamental conceptions of the world.

(iii) Since holding firmly to A.P.'s is holding firmly to their truth, their role as the acritically accepted foundations of knowing raises the question of the ways
In which they change. A.P.'s obviously do change, but, if they judge experience, they cannot change in the light of experience. How, then, do they change? Curiously for all his emphasis upon the historical character of his reformed metaphysics - studying the A.P.'s made or formulated in the past, whereas previous metaphysicians allegedly formulated the A.P.'s of their own times - and for all his experience as an historian, Collingwood, in his examples of his new metaphysics, gave only a series of static pictures and analyses of them, and not a narrative of changes. He merely noted that changes in A.P.'s occur due to strains among them, which, when too great, cause the structure to collapse and to be replaced by a modified system with the destructive strain removed, 'a modification not consciously devised but created by a process of unconscious thought' (EM p. 48n). Systems of A.P.'s will not be stable structures but will have internal conflicts, hidden by compromise and toleration but excited at some point into open conflict (EM pp. 73-7). Yet why should they be unstable in the first place, if they only judge and do not respond to experience, and likewise how can internal strains be excited, once they exist? Collingwood mentioned the possibility of an operative but recessive formula gaining dominance and a dominant one losing it (EM p. 75). But, again, why should this happen if they filter experience and are not testable against it?

(iv) Toulmin, in his article in the collection edited by Krauz, argues that Collingwood's theory of A.P.'s results in Relativism with respect to them, such that science and its A.P.'s are confined to each historical phase. One could add that, if A.P.'s are always the test of experience and are never tested by it, each group, period or even individual is enclosed within its or his own set of A.P.'s so that there can be either no movement at all or no rational movement from one set to another. Toulmin suggests that Collingwood's theory can be improved by a distinction between the theories and the disciplinary aims of science, so that there can be agreement about the latter while there is conflict over the former and that the latter constitute science and set the framework of continuity and debate. Toulmin argued that Collingwood did not see the continuity of debate in modern physics nor the sorts of reason, principle and procedure to which one can appeal in justifying a move from one set of fundamental concepts to another. Yet, while a definite improvement on Collingwood, these suggestions only put back the fundamental problem to a higher level: viz. How is it that the disciplinary aims of science were themselves established, and how may one move from other world-views, such as the magical one, to that of science? Moreover, Collingwood's A.P.'s are only those of science (and in his examples only those of natural science) not those of practices as well, nor of those of the joint existence of the sciences and of the joint existence of science with moral, religious and other practices.

I conclude that, while Collingwood's theory of metaphysics as the study of
A.P.'s presents a valuable alternative to all forms of critical and justificatory philosophy. It is in itself deficient in the above respects, as well as being rendered only historical and not existential as the formulation of one's own A.P.'s.

II

I now turn to Polanyi's own explicit account of philosophy and his procedure as given in *Personal Knowledge*. In the two passages stating his conception of philosophy (PK pp. 267, 299), Polanyi characterises it as explicating and affirming as one's own the beliefs implied in what one believes and practices, and that this enquiry into ultimate beliefs is inherently circular, since the formulation of his fiduciary programme - "I believe that in spite of the hazards involved, I am called upon to search for the truth and state my findings" - itself is an ultimate belief which he finds himself to hold.

Polanyi thus characterises the whole of philosophy as an enquiry into ultimate beliefs, those implied or presupposed by proximate ones and practices. This cannot be a critical or justificatory procedure, but must be a fiduciary and necessarily circular one. In contrast, critical and justificatory philosophies operate only by a tacit and unavowed circularity, as shown by the example of justifying induction (PK p. 306), a circularity which cannot be avowed within the framework of criticism and justification. It follows, though Polanyi does not say so, that only a fiduciary philosophy can be consistent. His own philosophy of science, and his explicit characterisation of philosophy of science, is consistent with his explicit account of philosophy generally: it is said to be the explication of the premisses or presuppositions of scientific practice, whose truth depends upon prior acceptance of existing scientific practice and, in turn, of the facts established by it, and most definitely not vice-versa (PK p. 162). Each department of philosophy would thus be the explication of the ultimate beliefs presupposed in a given sphere of thought and practice, so that ethics would be the specification of what is implied or presupposed in our prior moral beliefs and practices. Metaphysics would then be the specification of our ultimate beliefs about Reality as presupposed by the whole range of our prior and proximate beliefs in every sphere.

But, as we might expect from the philosopher of tacit integration, these explicit remarks do not embody all of Polanyi's own philosophical practice. On the one hand, there is, after all, a certain justificatory element implied in his approach, the back-handed one of showing, as with induction, that all justifications must assume what they seek to justify (see PK p. 315 on the role of language and of induction in learning language in any such purported justification of induction). The only justification of a proximate belief or practice is the back-handed one of showing that we cannot live and think without it, even while trying to justify it, so that no justifications are possible, only acritical belief while
we live and think. Polanyi comes very close to formulating this explicitly, but never quite does so. And, on the other hand, there is his practice of a genuinely empirical philosophy in the discovery of the ontological and epistemological roles of tacit integration, which goes beyond the formulation of ultimate beliefs.

I shall now take up the problems discussed in relation to Collingwood's theory of A.P.'s and relate them to Polanyi's treatment of ultimate beliefs.

(i) Polanyi gave no exact definition of 'ultimate belief' but merely implied that an ultimate belief is one presupposed by or in proximate beliefs and practices. It may be presumed to be ultimate either as having no further presupposition or as being beyond the ordinary tests of experience and as presupposed in all such tests. This imprecision is no real fault, for Collingwood's seemingly clear distinction between relative and absolute presuppositions breaks down. We have to acknowledge that some beliefs are more ultimate than others, unless we restrict them to what is presupposed in all thought and action. Moreover, Polanyi characterised the whole of philosophy, and not only metaphysics, as the unfolding of such beliefs or presuppositions. Like Collingwood, he affirmed that there is no possibility of justifying them, except implicitly in the back-handed way of showing that we cannot but presuppose them in our thought and action. Yet unlike Collingwood he did not deny that they are true or false. On the contrary, he explicitly affirmed them as true and himself as holding them to be true (PK pp. 267,299). And he forcefully argued against all Kantian and Positivist attempts to dodge the issue and the 'pseudo-substitutions' employed therein (PK pp. 16,147-8, 166,306-7,354). In effect, if not quite explicitly, his answer to the demand for justification and critical proof is that there can be none, for all such justification and proof must employ what is being justified and proved. That is, we must attend from a given set of things, especially our own mental powers, language and our sense of the adequacy of our language, to what we explicitly and critically consider, so that we acritically employ the first set in critically examining the second. Like his historicizing of metaphysics, Collingwood's denial of the truth or falsity of A.P.'s is a Positivist or Objectivist refusal of personal or existential commitment, despite his other comments on the need firmly to accept the A.P.'s of science and civilization (EM p. 173). Metaphysics and philosophy generally must primarily be the existential unfolding of what one finds oneself ultimately to believe or absolutely to presuppose in a given sphere of thought and action or in all such spheres, and only secondarily can it be a non-committed and detached explication of what others have presupposed or discovered themselves to presuppose. Collingwood, it seems, did not fully break out of the critical and justificatory framework in its Positivist form to a fully fiduciary view of metaphysics, and his theory of A.P.'s would have been consistent only had he done so.

(ii) Collingwood rightly insisted upon the need unquestioningly to adhere to our
A.P.'s and only thus to be able to enjoy what they yield. They cannot be proved for proof depends upon them. We have seen that Polanyi makes exactly the same point in the case of induction. Collingwood also said that A.P.'s judge and are not judged by experience, and that nothing can shake a person's or group's fundamental view of the world. Again, Polanyi's argument is that we explicitly believe a formulation of an ultimate belief, or of a rule of a practice such as scientific research, because we already believe or practice and so accept as valid that in which it is presupposed. Collingwood stated that A.P.'s are mostly held in an implicit manner, but he did not develop this point, and so, as I shall now argue, he could not explain how, after all, A.P.'s do change in the light of experience.

(iii) We saw that Collingwood gave no satisfactory account of changes in A.P.'s. Polanyi also gave an example of a people with a magical view of the world (the stock one of the Azande - PK p. 288) and in the same place quoted Koestler on the capacity of his Communist education to change everything into its own terms, and also Karen Horney on the similar capacity of Freud's system. Polanyi himself said, 'Our most deeply ingrained convictions are determined by the idiom in which we interpret our experience and in terms of which we erect our articulate systems' (PK p. 287). He then discusses three ways in which such a system can maintain its stability: by meeting objections singly so that each answer increases the reliability of the whole system; by supplying elaborations of itself to cover all or most eventualities; and by not having the conceptions which would allow rival ideas and theories to be articulated and thus in turn would allow contrary evidence to be accumulated (PK pp. 285-292). Natural science, as well as a magical view of the world, uses these means, rightly and wrongly (PK pp. 292-4). Yet Polanyi explains how it is possible to break out of an existing framework, and for ultimate beliefs or A.P.'s to be amended or discarded in the light of experience. For, though he does not explicitly state this, it is our tacit control of our intellectual operations which enables us to adapt or even to discard our existing framework to new realities, as well as to assimilate familiar ones to it. And that in turn is possible because we indwell one really ultimate framework or set of beliefs, out of which we can never break while we live and think: that in an independent reality which anchors our commitments. Collingwood's denial of the truth and falsity of A.P.'s entails his other implied belief that each set of A.P.'s is immune to change in the light of experience. He also ignored the question of how A.P.'s arise in the first place, whereas Polanyi emphasises the heuristic nature of all knowing and explains how we can cross logical gaps from ignorance to knowledge or from one framework to another. If everything known were known explicitly, such movement would not be possible. It is because we can have tacit intimations of new realities that we can add to or change our existing ideas, beliefs and frameworks.
(iv) It is the ultimate belief of all, in an independent reality anchoring our commitments, which settles the question of Relativism. Without it, each individual or group would be locked in its own A.P.'s or framework of ultimate beliefs and conceptions. Relativists themselves cannot break out of this the ultimate framework, for they implicitly hold Relativism to be true, and their accounts of each group with its set of beliefs to be accurate accounts of the realities referred to. What gives Relativism some plausibility is the lack of interest on the part of some individuals and groups in the anchoring of their commitments, and in adapting their conceptions and beliefs to novel realities. Such people are too much interested in maintaining the stability of their existing system and too little interested in adapting it the better to apprehend the world. Relativists need to be brought explicitly to acknowledge and accept their own tacit and ultimate belief in an independent reality and then responsibly to strive to apprehend it.

R.T. Allen

ON GETTING TO KNOW
Part of a paper on Polanyi and Education,
given at the Higher Education Group Conference, 1983.

When you travel in high mountains you spend a good deal of time plodding up glaciers and across ice fields. It is relatively easy going, though crevasses can be dangerous when they are masked in snow. The whole immediate world of ice and snow is moving, imperceptibly and relentlessly down hill. Around the upper edges of these snow basins there is usually a long, crescent-like chain of crevasses - the bergschrund - which can be a serious obstacle to mountaineers. Above this again and cut off from the restless down-flowing snow and ice fields is a steepening zone of rock and ice which runs up the high peaks. This world, though hazardous, is not mobile, as were the ice fields below the bergschrund. At the crevasse itself which separates the two worlds there are special problems and the climber will be on the look out for a natural snow bridge, leading upwards over the blue abyss. It can be a tricky business for him to pick the best way over - kicking, probing with his axe shaft and cutting steps. The slopes above may be, in one sense, more firm but they are shattered and exposed. Retreat is less easy; commitment and good judgment are necessary. From this one could squeeze out many analogies to our present dilemma but the main ones will be evident, especially the problematic divide between the prevailing 'downward' world view with its sliding relativism and the bridge across to something more permanent and more demanding; a bridge which we both find and make.

C.S. Lewis coined the term 'the great divide' to describe the conceptual
chasm which yawns between us and - his chosen marker - Jane Austen, between our epoch when thinking and feeling have been dominated by the metaphor of the machine which runs down, and the rest of history. One can view the chasm through many eyes: early on through the eyes of Blake, Coleridge or Goethe or, helped by recent critics, one can see it as George MacDonald or Newman did a century ago; or as T.S. Eliot did in the nineteen twenties. Fergus Kerr recently took readers of *New Blackfriars* on a lightning tour of some of the twentieth century thinkers who had been aware of the great divide, and of some who weren’t. He describes, for example, the rupture which took place between Bertrand Russell, a typical ‘logical atomist’, on the one hand, and D.H. Lawrence and Ludwig Wittgenstein on the other. Kerr suggests that Wittgenstein should be regarded as the bridge builder par excellence, for he made all his ‘upward’ moves in the very centre of the philosophical scene, where the issues were sharpest, the ground steepest. The later Wittgenstein, of the *Philosophical Investigations*, certainly rounds on his own past thinking and on that of other reductive philosophers whose habitual search was for little atoms of clear meaning. Wittgenstein does not revoke his past thought entirely but fits it into a larger, less secure framework. Thus:

> We feel as if we had to repair a torn spider’s web with our fingers... (The crystalline purity of logic was, of course, not a result of investigation; it was a requirement.)... We have got on to slippery ice where there is no friction and so in a certain sense the conditions are ideal, but also, just because of that, we are unable to walk.... So we need friction. Back to the rough ground!

Kerr paints a nice picture of another Cambridge maverick, panting up the slope, F.R. Leavis, who had spent thirty years ignoring Wittgenstein’s teaching. Then, browsing one day in Heffer’s, he stumbles on an adequate, non-reductive philosophy in Marjorie Grene’s *The Knower and the Known* and this leads him to Michael Polanyi. In my opinion Kerr is too dismissive of both of them and he is wrong to treat Polanyi as peripheral. As, however, we do not have to cast votes in a Top Guru Competition, we may, perhaps, acknowledge indebtedness to all those bridge builders. One of the reasons why Marjorie Grene and Polanyi are still important is their interest in biology and in the groping origins of life, of consciousness and of language. I must say that, as a schoolmaster, searching for friction and rough ground in the nineteen sixties, I was immensely grateful to both for their friendship and their marvellous books.

Polanyi opened up an approach to a new and liberating way of thinking about education - about knowing and helping others to know. The difficulty was, and still is, that he requires teachers and others interested in education to think in a new and complex way - to think about processes and living systems, about fields and boundaries within which people (ourselves included) form active constituent parts. Not only do we need multi-causal models for such processes but we need also to cultivate a rationality of involvement as well as a rationality of detachment.

Polanyi’s thinking about the learning process was in step with many of
Piaget's findings about early cognitive development and it often echoes one's own memories of childhood exploring; but it does not conform to the conventional thought models which derive from mechanistic psychology - what Popper calls 'the bucket theory' of learning. Nor is Polanyi in step with the prevailing and predominantly analytic philosophy of education. He reminds us that we can be agents of our own learning and that people can act with a measure of freedom and can change their inhospitable environment and, even more important, they can transform their total perception of the cultural field which constrains them.

I propose - following several good precedents - that we take the concept of a field and develop it. The concept started its scientific life in physics and was then pushed up into biology. We shall push it further 'up' into developmental psychology and education. We can start the move with Polanyi where at the end of Personal Knowledge, he speaks of 'a gradient of discovery'. It is as though we, the scientist or the young explorer, are committed to 'the slope' and to the values implicit in it before we can make any discovery. Notice, too, that such upward model-pushing is in itself antireductive; a rational man must be free to borrow concepts from, say, physics or chemistry or cooking and to exploit them at other levels without saying 'nothing but'.

Polanyi's Concept of a Heuristic Field

What kind of things happen when you or I move into a field of discovery and begin to find or make our way there? What is the shifting nature of our perspective when we are thus involved, or of others when they watch us? What about the things we use in an act of discovery or which we construct to help us - probes, say, or hypotheses? And how does it come about that toys sometimes become tools or - to turn in a more Coleridgean direction - that our toys or 'play withs' become 'explore withs'? Words are notorious for this protean quality. A metaphor starts life as a play thing, glitters for a while with poetic freshness and later becomes a convenient routine or a cliché. As children we learn all this by experience: that many of our cultural things and projects pass through stages of being fun, of being dangerous, of being boring. Yet as adults and as teachers, we are only beginning to understand the dynamics of such transactions.

Even though much of Personal Knowledge had been leading up to the idea of a heuristic field, Polanyi seems a little unconfident about it. For forty years, first as a doctor then as a physical chemist he had experienced fields of enquiry but he is well aware that the theoretical ground is treacherous, that terms such as 'lines of force', 'fields of influence', and telic phenomena in general, need careful handling. This is how he introduces the concept:

The lines of force in a heuristic field should stand for an access of opportunity, and for the obligation and the resolve to make good this opportunity, in spite of its inherent difficulties. The idea of such a field suggests... that our expectation to discover truth is justified by our nature as living beings. It asserts the fact that knowing belongs to the class of achievements that is comprised by all forms of living.
Some might say that there were problems about Polanyi's suggestion that all living organisms are 'exploratory' in tendency. We should be in no doubt, however, that human beings are so characterised, and that 'personal knowledge' needs to be understood as a continuously renewed, integrative and creative process. That is the insistent thread of much of Polanyi's teaching. He returns, again and again, to the question of what constitutes a creative act of enquiry and he illustrates his answer with examples from scientific discovery, from the work of connoisseurs, artists and explorers.

Karl Popper, in contrast to Polanyi, tends to take the early, intuitive processes of discovery for granted and is mainly concerned with how new ideas and new hypotheses, once they have emerged, can be shared, developed and exposed to refutation. Polanyi knew only too well the false starts, the long periods of groping and gestation during which problems are identified and models and hypothesis are generated. In The Tacit Dimension he identifies four more or less distinct stages in the 'getting to know' process and what follows is, in summary, his analysis of what goes on in one person's heuristic field.

Firstly we bring our skills, our experience and attitudes to bear on an oddity or anomaly in the patterns which especially interest us. We then seem to be on the edge of a field of doubt and possible discovery. We recognise it and start to work on it. Polanyi calls this the functional stage for it is our functioning competence, our range of appropriate skills and perceptual schemes which locate the problem and initiate the task.

Secondly, over a period of time we work at the task, with the materials and equipment which seem appropriate to it - a loom, say, or a microscope. As we do this, both expected and unexpected forms appear. This is what Polanyi calls the time of appearances, the phenomenal stage. It is often long drawn out and will be characterised by feelings, such as hope, perplexity and doubt.

Thirdly, there comes a stage when, with good luck, some overall pattern begins to emerge. This is the 'aha' moment when things fall into place. Polanyi terms it the semantic stage, using the analogy of someone hearing a nearly complete sentence. It is when meaning clicks into consciousness.

Finally, there is a stage which may last beyond the life of any single explorer or artist. It is when his or her discovery is progressively checked out against reality. Polanyi calls this the ontological stage for, insofar as a work of discovery or of art is 'true', its truth will be validated against the partly hidden but still unfolding realities of the universe.

Briefly, then, we bring our functioning competence to bear on a task; expected and unexpected phenomena appear; after a time some new overall, integrating pattern is perceived and, subsequently, we and others fill out, falsify or stretch to breaking point, that pattern which we once had a hand in discovering.

Polanyi's way of thinking about an explorer's passage through the stages of discovery generalises the experience of many creative craftsmen, poets and scientists. However, for the purpose of thinking about discovery in education, his analysis is insufficient. It omits, or only hints at, several elements which are essential for an adequate conceptual model of what actually goes on. The missing elements are:
Firstly, the teacher who has already travelled part of the way. In research (properly understood), as opposed to education, there will be no teacher. There will be an enquiring learner and he may have colleagues; but there is no one who already knows the hidden structure.

Secondly, play. Polanyi hints at it, but does little to extend our understanding of this crucial concept.

Thirdly, frontiers. These too are implied by Polanyi but the existential reality of the learner's own perceived limits is not discussed by him.

Fourthly, symbols. If we are to understand the power - both repellant and attractive - of symbols we need to turn to authorities other than Polanyi. Even in his last book, Meaning, which has much to say about metaphor, he does not assign to either verbal or non-verbal symbols their powerful heuristic function.

As far as education goes, we are still tied down, with a rather mean view of what most young humans can achieve. We are also tied down with a very limited and limiting philosophy about what education is. "Education," says Richard Rorty "is supposed to be abnormal, to take us out of our old selves by the power of strangeness". Yes, I think we are making a little progress towards the steeper, rougher ground.

R.A. Hodgkin

Notes

1 'De descriptione Temporum' in They asked for a paper (1962).
4 September, 1982.
5 Philosophical investigations, (1953) p. 46.
6 F.R. Leavis, The Living Principle (1975) pp. 16-69. He discusses Grene's The Knower and the Known (1966) and Polanyi's Knowing and Being (1969), especially the latter's 'sense giving and sense reading'. This paper of Polanyi's has especial relevance as, in it, he discusses Chomsky's ideas about linguistic competence and stresses the importance of some looseness (i.e. of play) in the processes which precede linguistic utterance.
7 'The first man of Science was he who looked into a thing, not to learn whether it could furnish him with food or shelter, or weapons, or tools, or ornaments, or play with, but he who sought to know it for the gratification of knowing; while he that thought to know in order to be was the first philosopher: Animae poetae 1914.
8 Personal Knowledge (1958) p. 403 (Polanyi's emphases).
9 For a recent statement, see his Objective Knowledge (1972), Chs. 1 and 2. Both Popper and Polanyi accept that a person's knowledge includes vast genetic and other deeply buried layers of information. Polanyi's concept of tacit knowledge includes this as well as accessible knowledge and he attributes to the whole a guiding influence which Popper does not. In a paper of mine, 'Making sense and the means for doing so' Pre/Text (1981), I defined competence as a relatively accessible, educable part of tacit knowledge. It was not possible to repeat this in the present paper.
10 (1966) Ch. 1, 'Tacit knowing'. Polanyi generally preferred the present participle - 'knowing' - to 'knowledge' because it stresses the process aspect of 'getting to know'.
MICHAEL POLANYI ON REDUCTIONISM

In 1967, the World Council of Churches and the World Council of Christian Education published a Report entitled Education and the Nature of Man. Amongst the appendices to the main report is one which was written by Michael Polanyi personally. Prof. W.R. Niblett has kindly allowed this to be reproduced in Convivium, pointing out that these six short paragraphs under the heading of Reductionism provide an excellent Summary of his general position.

1. Our educational task is set in a culture which tends to accept as real an image of the universe reduced to its tangible parts. We believe this to be misleading. An understanding of a comprehensive entity rests on our integration of its parts. Hence the isolation of the particulars blinds us to the sight of the whole; the image of man and human affairs is denatured by such a destructive act. The alternation of detailing and integrating is an essential method of elucidation in many fields; but our education must remember the fact that the essence of man lies in his highest faculties and responsibilities of integration and response.

2. The urge to represent the world in terms of its ultimate particulars springs from the ideal of a strict scientific detachment. But to comprehend a coherent entity is to interiorise its parts, while attending focally to the whole; hence to avoid such interiorisation is to destroy comprehension and be left with the isolated parts. Thus the pursuit of strict detachment produces exactitude at the expense of meaning.

3. Various modern systems of thought are open to this criticism. A sociology which would insist that the recent struggle of the American Negro must be explained without acknowledging the moral issue involved in it, is manifestly absurd. And again, when some Western universities and along with them the Western press explains the revolutionary demand for truth, for the rule of law and for the freedom of conscience, in the lands of Eastern Europe, as the normal outcome of progressive industrialisation, this attempt at scientific detachment blinds one to a decisive event of history.

4. A human being, making a responsible decision and dedicating himself to action, can be understood only by responding to his situation as if it were one's own. Systems of explanation which would avoid such involvement, must fail, and fail miserably.

5. This process of indwelling applies to all levels of knowledge. Indwelling recognises a hierarchy of levels in the universe. Each higher level operates by controlling the boundaries left indeterminate by the principles of the level below it, the lowest level being that of the ultimate particles of
matter ruled by the laws of physics. Rising levels add a deeper meaning to the whole and demand a deeper participation for understanding them.

6. This offers hopes of a cosmic perspective in which we can once more place first things first: the living above the inanimate, man above the animal, and the duties of man above man.

THE HIGHER EDUCATION GROUP AND REDUCTIONISM

Here is a condensed account of a considerable series of papers and discussions on 'Polanyi related' themes by a very diverse group of academics. Most of the papers have been published or will become available in duplicated form.

During 1982-83 the HEG planned a series of three meetings on this theme - one at Exeter and two at St. Anne's College, Oxford. Special attention was paid to the influence of reductionism in biology, medicine and psychology. From the first there was little disagreement that reductionist thought can be of great value to scientists when it is a consciously adopted strategy. This is what Arthur Peacocke termed 'methodological reductionism'. Problems occur when its claims are extended - when one moves to 'epistemological reductionism'. For example, in what sense is knowing physics more fundamental than knowing chemistry? A third, more imperial type of reductionism was also identified - the 'ontological' brand. This would involve the idea, explicitly held by a few scientists but implicitly held by many, that there really are no basic truths about the universe, other than those which are arrived at by going along the analytical, 'nothing but' line of enquiry. A good deal of time in the first two meetings was spent in exploring these ideas.

The Preliminary Conferences. Anyone familiar with Polanyi's approach would have been in sympathy with Donald Mackay's insistence that 'the ""I"" story' must play an important part in our understanding of any scientific enquiry or of any other 'free' or creative act. Richard Gregory, while accepting a multi-level hierarchy of dependent systems - the chemical being dependant on, and integrated from, the physical etc. - warned us against intellectual short cuts: against, for example, introducing the notion of mystery when we should be confronting puzzles, or against the ready use of such concepts as emergence.

At the September (1983) Seminar at St Anne's further papers were given or earlier ones were developed. Eileen Barker gave a fascinating account of her work on 'conversion' with special reference to The Moonies. She demonstrated not only the extreme complexity and strength of such conversions but also the tendency which 'society' displays for reducing the reality of such experiences to 'mere' sickness or even to crime: hence the frequent and often psychologically violent efforts of some parents and other authorities at deprogramming young converts.

Steven Rose focussed attention on the several different, legitimate ways of explaining a simple biological event, such as the sudden movement of a frog's leg.
It can be seen as: 1) a mere mechanical event; 2) as the result of some 'top-down' causation - starting with an act of the frog, seen as a whole; 3) as part of some developmental process; or 4) as part of some ontogenetic change in the species. He then developed a critique of the undue influence of reductionism in biology and psychology and offered 'a dialectical alternative'. This view emphasised both the active penetration of the environment by the organism and the importance to be attached to the fact that all the organisms which we observe have long and complex histories. Mary Midgley followed this with a stimulating paper called 'Reduction and the Manufacture of Demons'. She demonstrated the extreme causal complexity of human act and human dilemmas and - with critical glances at Dawkins and E.O. Wilson - attacked the common, illicit forms of reductionism which make people feel that they are under the control of fatalistic, determinant forces - 'the iron (i.e. 'demonic') grip of biology'.

Other papers were given by Arthur Peacocke, Donald Mackay, Adam Morton, Cicely Saunders, Gordon Wright and Mary Hesse.

The Main Conference

Here again I must apologise for a brief sketch. Perhaps the problem of the conference was that at least four different things were going on. There was some important soul-searching by the Higher Education Foundation about its role. Secondly there was some strenuous development of ideas already touched on: Arthur Peacocke and Eileen Barker probed the philosophical implications of their earlier papers. Peter Hodgson - in a vein consonant with Peacocke's approach, though perhaps more dualistic - presented us with a physicist's view of the ultra small - all the way down to gluons. Then, thirdly, there were two literary contributions. Anthony Nuttall stretched, and even inverted, the concept of reduction so that many of those who listened must have wondered whether it is possible to 'reduce upwards' e.g. 'Jesus reduced the complexities of the Law to the simple commands ...' In contrast to such simplifying we were invited to contemplate the incredible richness of Shakespeare who created a vast cosmos of complexity and human 'overdeterminedness'. (Memories, here, of Mary Midgley.) Then there was a paper by Barbara Reynolds on 'Translating'. She presented an illuminating picture of the translator-artist at work. First she (or he) has to penetrate, imaginatively, far into the experience and ethos of the original writer. Having then explored (of course, only in part) this other artist's tacit world, the translator then sets about recreating the poem or play in her own language. The constraints and the inevitable semantic problems presented by both languages would seem, for the translator, to be as important as her determination to transcend them.

Finally there were two papers which grappled with the question - where might all this be leading? Robin Hodgkin took Polanyi's concept of heuristic field and welded it to Winnicott's concept of potential space i.e. that in which children or other 'explorers' play and experiment. He derived a general educational model
from all this and used it to show how a word (or any other human artefact) can become a symbol when pushed out to the explorer's 'frontier'. Finally Geoffrey Price took us on a strenuous journey in which he used Owen Barfield's idea that knowing any object should involve us in a far greater measure of indwelling or participation (Bruhl's sense) than any 'English' philosopher would be likely to admit. The end of his paper was an approach to Lonergan's ideas (set out in \textit{Insight}) on what understanding in science should comprise: i.e. both a statistical perspective (\textit{= ?} conventional and analytic ?) and a systematic (\textit{= systems theory = holistic ?}) perspective. In the long run, as Barfield and Lonergan suggest, we shall rediscover 'indwelling' - not the limited participation of the primitive (an innocence to which we cannot return) but 'a religious participation' - an active awareness of unity in all phenomena and in all knowing.

R.A. Hodgkin

\textbf{BOOK REVIEWS}


\begin{itemize}
\item I find myself wanting to say two almost contradictory things about this book: on the one hand it deals with a crucial complex of problems arising from post-critical philosophy in a detailed and wide-ranging way that cannot but help to improve the general understanding we have of the place of that philosophy in our contemporary situation; on the other, it approaches the subject matter in a way that has certainly resisted, and occasionally defied my attempts to understand what it is really about. Because I want in the end to commend this work, and to leave the reader with an impression of its strengths, I propose to deal with the second of these points first. It is possible that someone to whom the works of Rorty, Polanyi, Heidegger, Habermas, Gadamer, Popper, Nietzsche and Dilthey were second-nature would find the book transparently simple to read. In that case, I ask myself whether they would also find it rewarding, for as I have struggled with it over the past few weeks the suspicion has grown that Echeverria has made a mountain out of a mole-hill.

My negative remarks arise from two areas: one, the least important, consists of a regret that so much work (ten years, we are told) has been spoiled by an unnatural English style, countless misprints, and perpetual irritating split infinitives ("to no longer be tempted" occurs five times in as many pages - would that he had not been); the other, more seriously, concerns the way in which the
subject has been tackled.

The problem-complex Echeverria is concerned to explore consists of many inter-woven questions, of which the following are some: how all critique of knowledge, all epistemology, presupposes knowledge; how epistemology and hermeneutics are related; how social practices are born, continue, and pass away; how all philosophy must take its own historicity into account, as a counter-attack on transcendentalism; how we are to distinguish between presuppositions and prejudices, i.e. how we are to criticise our own social practices; how we are to live with or overcome the impasse or apparent arbitrariness of our own historical situatedness; how what seems intelligible from one social standpoint can appear unintelligible from another; how consciousness as life reflecting on itself can be held to be continuous with the evolution of life; and so on. Now it is clear to me that all these problems are related, but it is far from clear how Echeverria relates them because he has chosen - mistakenly, in my view - to approach them by analysing the philosophies of five different thinkers more or less separately. This makes it difficult to be clear whether we are criticising Rorty, Polanyi, Heidegger, and so forth, or drawing upon them to help resolve the problem-complex of our choosing. The separable questions of the problem-complex metamorphose into one another with bewildering subtlety, so that I found myself being asked to consider a second question without having noticed that we had resolved a first. Moreover, just at the points where Echeverria tries to progress beyond his chosen philosophers (as, for example, in his introduction of the ghastly neologism "distanclation" as a counterpart to participation, and as a dimension he does not find in Rorty or Polanyi - wrongly, I would say, in the case of the latter), his argument is weakest. The fact that he is a dutchman writing in English makes me feel churlish to say it, but someone who really understood what he was trying to argue for and achieve would have expressed himself more clearly.

So much for my negative response. Positively, the misprints aside, the book is well printed with generous footnotes all appearing on the page to which they refer, and a handsome bibliography. The index is poor, but that is probably more due to the nature of the text than an omission of the publisher. I should perhaps explain my rather severe "either/or" concerning "either an analysis of five philosophers", "or drawing upon them to resolve the problems". This arises from a tendency on Echeverria's part to discuss minutiae in Rorty or Polanyi, without tying his remarks in to the general flow, with the result that the reader feels foiled by red herrings which, although interesting in themselves, detract from his understanding of the overall argument.

Having said all this, I nevertheless feel that I shall return again and again to this work because it places post-critical philosophy on a world-wide canvas, by connecting Rorty in the States with Polanyi in the U.K., and with Heidegger and the rest on the continent. This breaking of new ground has been needed for some time, and in the future we shall doubtless see writers such as David Tracy the
American Jesuit (whose "revisionist" theology kept springing to mind as I read Echeverria) grafted in to enrich the strain. Somewhat surprisingly in view of the overall thrust of the work, and especially of Rorty's dependence on him, Wittgenstein does not find a mention; nor does Freud as a very different writer opposed to the idea of presuppositionless knowing. These absent friends, however, show up the real value of the work as a foundation for further work, as a promise of fruitfulness if not its realisation.

For example, Echeverria helped me to think through the question of tradition and authority in terms of a philosophical-sociological phenomenon. Because the transcendentalist tradition has institutionalised the suspension of belief, it has made all our received traditions (with their wisdom and folly) open to any and every question we might ask of them. But it has also blocked the way to justify that received wisdom on the grounds that it is traditional and therefore authoritative. In other words, transcendentalism is guilty of epistemological self-righteousness in demanding that every tradition should be able to justify itself afresh in every generation (or, to be quite consistent, on every occasion where it is invoked). But of course it cannot do this because the grounds of our traditions are frequently inarticulate: we know more than we can tell. So, cut off from tradition as in any sense self-justifying, and unable to justify tradition afresh on transcendentalist terms, we find ourselves suspended in our own doubts, called upon to decide but denied any basis for decisions. Consequently, since we cannot suspend decisions forever, we are forced by rationalism into irrationalism. All this arises because, whereas we have institutionalised suspension of belief, we have forbidden suspension of doubt, in other words, we are denied recourse to responsible commitment. In Polanyi's terms, mutatis mutandis, the objectivist dilemma produced by epistemological perfectionism leads inevitably into epistemological inversion and, with it, moral inversion.

This basic point made, that commitment is a sine qua non of rational and responsible life, Echeverria addresses the question of how we separate commitment to systems which are true from commitment to systems which are false. Rorty sees hermeneutics as a restorative discipline which salvages valuable insights from past historical situations (with their own presuppositions and prejudices) for our own successor situation. When we examine another system of beliefs than our own, as with the Azande, we can detect internal incoherences. But the closer we come to our own situation, whether in our hermeneutics (Rorty) or our biology as life reflecting on itself (Polanyi) or in our finite throwness as Dasein (Heidegger), the closer we come to the logical barrier presented by our own presuppositions and prejudices. Rorty and Polanyi carefully distinguish reflections which do not contain themselves (which both regard as unexceptionable) from supposed total reflections, such as in the "transcendental pretense" (which both regard as logically impossible). To put it crudely, but graphically, you cannot dig a hole in the place where you are standing. Gadamer sees Heidegger's insistence on human
Finitude as part of the key to understanding the absurdity and pretentiousness of the critical school; just as Rorty argued against a universal vocabulary capable of describing without presuppositions all phenomena, and hence of achieving objectivity, so Gadamer sees the quest for a transcendental perspective as hubris, a seeking after divinity by a finite creature. It is experience which opens man up for more experience; it does not simply supply closed answers to a diminishing supply of unanswered questions (contra Rorty, whose fear is that all questions will one day be answered and all human incommensurable discourse cease).

Echeverria discusses the differences between Habermas' and Gadamer's readings of Hegel's Introduction to the Phenomenology of Spirit. Habermas sees the resolution of the problem of a critique of criticism in terms of metacriticism, a turning of criticism against itself, against the ground from which it springs. Whereas for Kierkegaard our jumping out of the potentially infinite loop of criticism is what matters, for Habermas it is our jumping in; the will to be rational is our act of freedom. Gadamer thinks that Habermas is far too easily satisfied that the power of reflection is sufficient to produce a total vision which is "primal and final" (Ricoeur); for Gadamer this smacks of epistemological self-righteousness, against which he proposes the hypothesis that philosophical hermeneutics, interpretation "is an open process that no single vision closes" (Ricoeur). Habermas, in making decision itself decisive (anticipatory resoluteness) immunises us against precisely the kinds of recalcitrant experiences which should leave us perpetually open and finite. Gadamer thinks that we have undervalued negative experiences, and therefore been led to stress confirmatory experience to the extent that truth becomes contingent upon experimental verification. Yet negative experiences involve a bipolar change: in the process of coming to know an object we are ourselves changed (this is Hegel's reversal of consciousness). Our negations depend upon prior positives, so that in our effective reflection we are not merely passive observers, but participative; even in negation the new object or theory contains the truth concerning the old. Insight is a return from something that had deceived us and held us captive, and therefore fundamentally a freeing and opening-up of man, not for the infinite, but for the absolute boundary of our finitude, for our "ownmost historicity".

There is then, in chapter four, an interesting discussion of Nietzsche's view of history leading to Heidegger's (inadequate - says Echeverria) solution to Dasein's not-at-home-ness in terms of the vision which just for a moment gains mastery over the everyday. But this, says Echeverria, looks in the end "too much like a private peace treaty between the philosopher and the lost world" (p. 197) in that it is an extravagant piece of self-assertion. Echeverria moves on to say what his own preference is in chapter five where he discusses Gadamer's response to the problems he addresses.

Gadamer uses Spinoza to show how the enlightenment replaced ecclesiastical dogmatism with an equally prejudiced rationalism which led to a separation of
meaning from truth as one exigency of the critical method. Truth became a casualty of objectivizations which emasculate tradition in at least three respects. These are authority (the sense of being addressed by tradition in a way which obliges us to acknowledge its claims upon us), truth (in which the past calls us into question by virtue of its claim to truth within the tradition, and therefore as a corrective against epistemological self-righteousness), and historical coherence, continuity and intersubjectivity which mediate between the authority of tradition and the present by bridging the distance between interpreter and 'object'. The last of these constitute the effectual workings of tradition, effective-history for short. In a key passage, which gives the flavour of the whole book, Echeverria draws all this together as follows:

As Gadamer sees it, the movement of historicity pierces the very heart of the structure of human subjectivity. Hence, there is no definitive enlightenment for human subjectivity. For Gadamer the identity of the interpreter can itself be acquired only in the complexity of historical tradition, and not in the alleged epistemological fulfilment of a temporal 'present'. The epistemological subject that deems itself to be a self-contained unity outside the movement of effective-history (Wirkungsgeschichte) is in reality an empty ego. It is an ego that Gadamer, following Hegel, describes as the result of an indeterminate negation, that is, a negation that lacks the ground of positivity by virtue of by-passing all content, namely, all cultural configurations, and in the end returns to itself as an empty nothingness.

Consciousness of our place in effective-history determines our hermeneutical situation. Echeverria then asks whether Gadamer's critique of prejudices is in fact adequate, and concludes that it is not. The reasons seem similar to those raised against Rorty: our hermeneutical situation or system of social practices is not monochrome, but in fact presents us with conflicting and competing demands, which is the sphere of powers, a phrase drawn from Lonergan.

Chapter six, the "Conclusion", reads more like an extended footnote. Polanyi's notion that being apprenticed to our subject involves learning to accept its criticisms of ourselves is spoken of with approval; Rorty's qualification of history as mere change with the "existential intuition" that redescribing ourselves is the most important thing we can do, with contempt or, at least, suspicion. Self-criticism is said to avoid self-righteousness because in community we are challenged by differentiatedness sufficiently always to be challenged to engage in further self-criticism and so to find human authenticity "and enriched understanding of oneself and one's destiny" (p. 252). Finally, appearing in two-thirds of a page and like a rabbit out of a hat, we are required to digest the idea of "primary" and "secondary" history. Secondary history, history "enclosed within itself, because centred on itself" (p. 254), is carried by the dynamics of a "primary" history "which, usually in a 'crisis situation', manifests itself, through words and deeds of agents who have been attentive to its power" by removing the centre of history form "secondary" history into "primary" history. Suddenly "primary" history becomes "transcendental", as the action of the Author,
a "transforming preservation that overcomes the tendency of 'secondary' history to cling to itself".

In fact, if the term 'primary' is to be justified at all, then it should indicate a fulness of Truth dynamically revealing itself and disclosive of the meaning of our humanity along a track of time that comprises a structured order or arrayal of historical differentiation; a differentiation of temporal moments, phases, and periods of the history of mankind which together unfold the wonder of 'Creation'. Thus what a historical community makes explicit in the genetic process of differentiation (along the track of time) is always governed by what it knows (or imagines) to be universal about those guiding orders (or creation), and not just by the ad hoc demands of an immediate problem.

Echeverría, in other words, is seeking to present his own solution to the problem of presuppositions and prejudices, and all the other questions of the problem-complex under examination, in terms of an eschatological perspective as understood within the Judaeo-Christian tradition.

Self-criticism, as envisaged here, is related to the dynamics of that 'primary' history as a transforming preservation of our authentic subjectivity. It concentrates on de-centring our historical subjectivity, in so far as this subjectivity tends to be enclosed in its own autonomy.

Self-criticism is not just concerned with the richness of meaning of that single historical process whose many implications are made explicit along the track of time, but also it is deeply 'interested' in an eschaton of fulfilment. The need for such an eschaton shines through in the inclination towards a 'utopia'. I believe it has become manifest already in the unique event of the resurrection of the crucified Son of Man.

Now, sympathetic as I am to the tenor of this sentiment, I have to say that after two-hundred and fifty-nine pages of intense philosophy this comes as something of an anti-climax. I do not mean, of course, that the subject-matter is unworthy of the sentiment, but that it must be presented in terms and with a carefulness of argument commensurate with all that has gone before if it is not to condemn itself as prejudice, i.e. as precisely the thing we have been discussing. Moreover, to assault transcendentalism "tooth and claw" for six chapters, only to reinstate it without comment on page 254 in terms of a hitherto unmentioned "primary history" is an insult to the reader. My feeling, in other words, is that Echeverría sells himself, and his argument short by treating his own "solution" less seriously than the positions he opposes with it.

Other than that, and with apologies for unintentional misreadings of the text occasioned by exhaustion, I leave the reader to decide whether Criticism and Commitment is for him.

John C. Puddefoot
This issue of *Zygon* contains the papers of the 1980 annual meeting of the American Academy of Religion, following upon the issues that emerged from that of 1979 and Harry Prosch's review in *Ethics* No. 89, Jan. 1979, of Richard Gelwick's *The Way of Discovery*. I shall concentrate on the five papers that concern the controversy between Prosch and Gelwick about the reality of God in Polanyi's writings.

The other two papers are 'Truth in Religion: A Polanyian Appraisal of Wolfhart Pannenberg's Theological Program' (sic) by John V. Apczynski, and 'Pannenberg's Polanyianism' by Ourward Foster. The issues debated are too intricate to be discussed here, and I shall simply note that the central one is whether or not Pannenberg separated out impersonal statements in theology from their personal basis and context.

I shall now summarise the main points in the other five papers with some comments of my own in square brackets and some concluding remarks.

1. 'Michael Polanyi on Art and Religion: Some Critical Reflections on Meaning', by Ronald L. Hall.

Hall argues that Meaning, tending to revert to the 'old positivistic assumptions concerning the relation of the sciences and the arts', has two shortcomings in the relations between science and art and between art and religion, both of which are based on the framing effect by which a work of art is abstracted from concrete, historical and existential reality and is detached from its author. Hall criticises Polanyi in Meaning for aligning science with indicative as contrasted to symbolic and metaphorical meaning, and thus with the language of prose and everyday existence. But, Hall argues, science deals not with ordinary existence but with certain aspects or parts of experience, treated in abstraction and pure generality, and, like the artist, the scientist does not appear in his work although intensely engaged in producing it. Both science and art are therefore 'aesthetic' rather than 'existential', with the framing effect in common.

Similarly Hall criticises Polanyi for making religion too 'aesthetic', an abstraction, instead of being centred in what is 'existential': e.g. M p. 154 on rites and ceremonies and M pp. 158-9 on myths. Polanyi's reference to Eliade on 'Great Time', which is outside profane history and in the category of 'cosmos', ignores Eliade's description of the other religious framework of 'history' in which existential, historical and concrete reality is central, as with the religions of revelation. The language of 'historical' religion is indicative, not
symbolic nor metaphorical, in Polanyi's terms, but is in the first-person and not, like science, in the third. 'Personal relationships of dialogue and revelation replace the poetic anonymity of the aesthetic encounter'. Polanyi has thus poeti-
cized religion and made transportation out of the existential its true goal.

I think that Hall has made his case and that the historical nature of Christianity has been ignored in Meaning.

2. 'Questioning Polanyi's Meaning: A Response to Ronald Hall', by Bruce Haddox. Haddox agrees with Hall's paper and urges that symbols and metaphors, as described by Polanyi, can themselves be subsidiary elements in other integrations and thus used to indicate something about the world. 'Indication is an act by someone, not a logical characteristic of a particular class of propositions'. Polanyi seems to forget in Meaning all the relevant points established in Personal Knowledge.

Haddox enquires as to the way in which language, in historical religion is symbolic and metaphorical, and to the relation between its metaphorical character and its indicative function. [We should note that Polanyi does not deal with the traditional problem of how earthly things and the language referring to them can be used to speak of God.] Christianity's symbols, such as the Cross, are story-bound and existential and historical, and are not keys to reality in themselves. But Polanyi ignores this and so gives an objective and ahistorical account of them. As historical, they are used to indicate realities and to make truth claims and so are open to verification.

As for first-person indication, Haddox argues that I indicate by appearing as the indicator of what is indicated and that this does not fit Polanyi's scheme of indication, symbol and metaphor. For Polanyi assumes that indication is third-person indication and thus that, if something is not in the third person, it is not indication.

Language in historical and revelatory religion is like that of first-person indication and everyday prose. Polanyi went against his own position in Personal Knowledge when he took third-person indication as the standard by which to measure symbol and metaphor. The sharp distinction in Meaning between 'self-centred' and 'self-giving' acts results from ignoring the self-involving nature of all acts, a basic thesis of Personal Knowledge. Symbol and metaphor are furthermore and wrongly taken to be that about and not with which we think.

Again, it seems to me that Haddox has made his case and that the account of symbol and metaphor and their roles in religion needs to be revised.

3. 'Science and Reality; Religion and God: A Reply to Harry Prosch', by Richard Gelwick.

This is Gelwick's reply to Prosch's argument that Polanyi held that the products of imaginative integration in myth, art and religion do not bear upon any independent reality. Gelwick begins with some biographical details about Polanyi's religious affiliations, later confirmed and supplemented in Bill Scott's paper. He then turns to Prosch's criticisms of The Way of Discovery and I shall now summa-
rise his replies to them.

(a) He cites *The Way of Discovery* pp. 101-7 in defence of his alleged failure to note Polanyi's distinctions between science and works of the imagination.

(b) He quotes *PK* p. 202 on verification and validation and emphasises that there both are said to refer to a reality independent of the speaker. [But Gelwick does not note that Polanyi did not there clearly distinguish between the speaker's reference to a work of art and the verification or validation of that reference, on the one hand, and, on the other, the work of art's reference to a third reality and the verification or validation of that reference. And many works of art make no such reference, while others suffer little diminution if such a reference is found to be mistaken at least in part, e.g. *King John*.]

(c) He cites *M* pp. 74-5 as supporting his account of the increasing self-involvement as one moves from self-centred integrations in indications to self-giving ones in symbols, as against what he claims is Prosch's dichotomising of them.

(d) Likewise he cites 'From Perception to Metaphor' p. 14 on consecutive levels of reality as known in science, the arts and religion, and not, as he alleges Prosch to assert, discontinuous or antithetical ones.

(e) According to Prosch, he ignored the relative roles of creation and discovery in self-giving and self-centred integrations, the former being 'transnatural' and incapable of verification. But, he replies, this is to make positivist assumptions about what is real and to assume that science is superior because testable by perceived facts and so alone referring to an independent reality. Prosch has thereby contradicted the whole thrust of Polanyi's philosophy and ignored (i) his argument that the integrations of science are also of Incompatibilities (*M* p. 125), the difference being the greater degree of effort needed to sustain transnatural ones; (ii) the risk involved in science and the strain and suffering often needed in achieving scientific insights; and (iii) the acritical framework of the culture in which we learn, grow and practise science. Prosch breaks up Polanyi's unitive view of science (e.g. *M* p. 64 on the alleged fact-value dichotomy). Gelwick also cites *M* pp. 69, 109-19, on artificial coherences as not really being such in giving meaning and coherence to life.

(f) He criticises Prosch's claim that transnatural integrations cannot have the same ontological status as natural ones in science, and refers to Polanyi's hierarchical view of reality. Quoting *PK* pp. 284-5 he shows how Polanyi makes room for yet higher levels of transcendent obligations and religious belief, continuous with lower ones. He also refers to Polanyi's emphasis upon the heuristic nature of knowledge and upon degrees of reality, greater in persons and problems than in cobblestones.

(g) Replying to the passage Prosch quoted from the draft for 'Meaning' (May 26th 1960), Gelwick says that Polanyi found the category of transnatural sufficient to include religious meanings and refers to the rejection of literal supernaturalism in *PK* p. 283. [Gelwick does not point out that the sentence which Prosch omitted
reads: 'Must there be a recognition of supernatural powers exercised by God in a way that it would make sense to ask God for help in the expectation that he might avert the course of some event which menaces us?' That was what he was inclined to doubt, and, apart from disbelief in God, could have doubted for several reasons: e.g. disbelief in any sort of divine intervention or belief that God has already foreseen one's prayer and arranged for its answer.] Gelwick also refers to 'Science and Religion: Separate Dimensions or Common Ground?' and Polanyi's wish to purify truth from scientific dogmatism.

What Gelwick gives us is a 'maximalist' interpretation of Polanyi's writings which has him definitely affirming the reality of God, whereas Prosch gives us a 'minimalist' account in which the reality of God is not affirmed, outside purely imaginative integrations, and would seem rather to be denied, since 'transnatural' integrations are merely imaginative.

4. 'Polanyi's View of Religion in Personal Knowledge: A Response to Richard Gelwick', by Harry Prosch.

Prosch counters by stating that he wrote most of the passages of Meaning cited in his defence by Gelwick, for they do not appear in 'Acceptance of Religion'. He confines himself thereafter to Personal Knowledge in which he claims there to be no basis for affirming the independent reality of God. He cites PK pp. 279, 283-4 on the parallels among religion, art and mathematics, all of which use experience as their theme and are not corroborated by it as is science. It is empirical reality which anchors commitments and factual statements and exists independently of us (PK p. 311). [But might not 'factual' here mean 'mundanely factual' as it so often does?] In science there are unforeseen empirical confirmations but in maths and art, and therefore religion, so he claims, only unforeseen germinations and inexhaustible funds of meaning (PK pp. 189, 201, 310). He argues that in PK pp. 280-1 religious statements are said to be neither true nor false and so subject only to validation, and cites PK p. 284 on possible irrelevance of their factual basis to the supernatural significance of events.

He states that he never could get Polanyi to admit that any religion needs a notion of its own real supernatural origin, and reproduces more unpublished material (from Boxes 38 and 41 in the collection at the University of Chicago) in which Polanyi stated that 'The vision of an indeterminate meaning, which floats beyond all materially structured experiences, exists on the lines of a stratified sequence ultimately pointing at unsubstantial existence'. [But does 'unsubstantial existence' mean 'non-existence' or 'non-material existence'? From what Prosch quotes, one cannot decide.] And, 'Thus the power of prayer, of religious services and all solemn devotions can be said to carry us away and deeply engulf us, but these emotions can only guide us to a religious faith, for they might speak of God as of an imaginary person: as of a possibility and not as an actual fact.

But it is wrong to deprecate the worship which absorbs us emotionally without
affirming the supernatural reality of God. God would not refuse to listen to such devotion.'

From this Prosch concludes that Polanyi did not think of God as existing independently of our articulate systems. [Yet all that the second quotation definitely states or implies is that there is a risk in worship and belief and no need to affirm the 'supernatural' existence of God, but no real clue as to the meaning of the word.]

Prosch presses a 'minimalist' interpretation upon Polanyi's writings which, it seems to me, they do not unambiguously entail.


Scott offers two points on the main question. Firstly he argues that Polanyi allows for ways of relating to reality other than that of perception which involves a separation of the knower and the known - PP pp. 346-8 on the shift from I-It to I-Thou as one ascends above the merely physical level; M pp. 74-5 on self-giving and surrender to the reality symbolised, and surrender is involved in all beliefs - see 'Forms of Atheism' [published in Convivium No. 13, Oct. 1981]; PK p. 198, M p. 156 God is known only in serving him, as are moral values, and divine reality can be known only by entering into the union of incompatibles in liturgy and prayer.

As for Polanyi's reticence in referring to divine reality, Scott gives three possible reasons: a failure in articulation, as with 'literally I believe none of the Lord's Prayer' ('Acceptance of Religion') which does not exclude symbolic understanding [or analogical interpretation]; his personal diffidence in expressing his religious beliefs, noted by many friends; and a change of mind between 1940 and the lectures on 'Meaning'.

Scott then gives the biographical details previously referred to. It seems to me that Scott has given us the right account of the issues. Neither Gelwick's maximalist nor Prosch's minimalist accounts can be supported fully from published and unpublished material, though, to judge by the plain meaning of the words, the reality of God is always affirmed. We need to remember that, as with art, politics and other subjects, Polanyi dealt with religion and Christianity only in passing and not systematically, and that we must not read much into his writings. For example, in Personal Knowledge he treats the accidental features of man's earthly and fallen existence as if they were essential and applied also to life in glory. We also should remember that the real issue is the bearing of the philosophy of tacit integration upon religion and God, not so much Polanyi's own incidental remarks and beliefs, which may not coincide with the former. And, as I have shown in some detail in my study of this subject ('Transcendence and Immanence in the Philosophy of Michael Polanyi and Christian Theism' - Ph.D. thesis, London University, 1982), there are real problems in relating that philosophy, epistemologically and ontologically, to Christian Theism, although ultimately they support
and require each other.

Finally, I would like to suggest a possible interpretation of Polanyi's writings on religion: that they look like a version of Catholic Modernism. Unlike Liberal, Modernist and many traditional Protestants, Polanyi clearly valued the role of rites and liturgy, and also the social significance of the church, but there is a tendency in Personal Knowledge and elsewhere to be sceptical of the relation between God and history and to wish to continue Christian practise despite the possible breaking of that link (whereas with Loisy and the rest it was the Biblical record which was in doubt). If Prosch's interpretation could be clearly sustained, then we would have an 'immanentism' very similar to that held, or alleged to be held, by the Catholic Modernists. A comparison with Dean Inge (theologically Neo-Platonist and mystical, Biblically Modernist and socially conservative) might be interesting also.

Further and fuller publication of the unpublished MSS in the Chicago collection would be helpful, since the controversy so far has suffered a little from selective quotation, as I found out when I was kindly sent a copy of 'Acceptance of Religion'.

R.T. Allen


This book was kindly lent to me by Dr. Magda Polanyi. It is an interesting and scholarly collection of essays ranging from Galileo to Einstein, Polanyi and von Neumann. The twenty-eight page article by William T. Scott is entitled Michael Polanyi's Creativity in Chemistry. We reap the benefit of Bill Scott's exceptionally detailed knowledge of Polanyi's early life, which he needed to acquire for the biography he is currently writing, as well as of his expertise as a scientist, which enables Scott to write with precision and understanding of the whole range of Polanyi's scientific work. For the non-scientist, like myself, who unfortunately cannot enter intelligently into Scott's description Polanyi's research into thermodynamics, adsorption of gases, Xrays, crystals and so on, nor follow the diagrams and formulae, there is the compensation of interesting references to Polanyi's correspondence and dealings with such eminent scientists as Einstein and, at the end, a quite excellent section where Scott sums up the significance of the work Polanyi did after exchanging his chair of physical chemistry for one in the Manchester Faculty of Economic and Social Studies. The
essay as a whole skilfully relates the scientific problems which Polanyi studied and the ideas and criteria he developed out of this experience of creative research for thinking about the nature of the world and our position in it. Polanyi's thirteen years at the Kaiser Wilhelm Institute in Berlin were tremendously productive and covered "metallurgy, crystal physics, colloid chemistry, structural chemistry, luminescence, reaction kinetics and catalysis". In 1933, Polanyi moved to England. Scott describes how he came to be offered the Chair in Physical Chemistry at Manchester after an interview in which he "brilliantly discussed crystal structure, physical metallurgy, cellulose, contemporary French literature and detective stories". The variety of his research areas in Manchester was also astoundingly rich, but I will not dazzle the non-scientist with another long list. Suffice it to say that the essay serves to give this profound and sensitive genius the reputation as a scientist he deserves. In the last few pages, Scott shows that Polanyi offers us a new theory of society drawn from his participation in the community of science and a new way of looking at the personal and social process of acquiring knowledge. His insights have significance both for education and for the organisation of industry. As early as 1935, Polanyi was writing about the failure of the Soviets to control their economic system by central planning and he fought to prevent the move towards central control of science in Britain, which was headed by J.D. Bernal and J.G. Crowther. "The Marxist denial of truth as a value and power in itself was the philosophical fallacy in addition to the practical one that Polanyi saw as the grounds for rejecting what he called Bernalism." (302)

I cannot resist ending with a lengthy quotation from the end of the essay for the benefit of those Convivium readers who may find it difficult to obtain the book for themselves. Scott writes of how Polanyi found the Laplacian view of the world useless as a model for science, since every organised system has its own laws of organisation or order of operation, which control the boundary conditions for the underlying laws of physics, and so are not derivable from these laws.

Hence the world, for Polanyi, is a hierarchy of many levels of complexity and organisation, from elementary particles up to persons and to culture, each higher level being logically independent of the lower.... Among the laws of complex organisation, one should be singled out for its special interest to Polanyi. That is the law of spontaneous ordering such as I have described for the community of scientists for coordinating with each other. Another example is a community of buyers and sellers in a free market coordinating to develop a price structure. And in the evolutionary span, survival efforts, curiosity in the exploration of new ecological niches, and chance mutations all coordinate into the release of the hidden potentialities of the ever-widening family tree of new species.

Within an individual life, new ideas make creative changes, and in fact all of our conscious existence has an irreversible, growing character. Even the premises and methods of science undergo irreversible, creative changes with every act of discovery. We face an indefinite future, as the consequences of our efforts and perceptions of the events around us will unfold in unforeseeable ways. Our security is not to be found in certainty but in faith, faith that we can make even more contact with reality and that we can together face problems, not only the scientific but the technical and especially the human, if we can utilise in community our powers of mind and perception.
The world of scientists and of all human beings, as well as the natural world in which we live, is dynamic, creative, unpredictable, and with all its misery, full of enjoyment and hope. This is the message of the chemist and philosopher Michael Polanyi.

Joan Crewdson

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