

Convivium

Newsletter N° 14

March 1982

CONTENTS

- P.1 NEWS AND NOTES
- 3 FRANCES STEVENS: 'PERSONAL KNOWLEDGE' AND POETIC IMAGINATION. Part 1.
- 24 RICHARD GELWICK: A REPORT ON THE POLANYI ARCHIVES.
- 25 MICHAEL POLANYI: EXERPT FROM UNPUBLISHED MANUSCRIPT. (From Wm SCOTT)
- 26 WILLIAM T. SCOTT: PETER DRUCKER'S ERRORS.
- 27 R.T. ALLEN: A POLANYIAN APPROACH TO NATURAL THEOLOGY.
- 30 ABSTRACTS OF AAR MEETINGS
- WALTER GULICK: THE CIRCUMSCRIBED POEM OF PASSION.
- JOSEPH KROGER: RELIGIOUS IMAGINATION AND THEOLOGICAL REFLECTION.
- RICHARD GELWICK: COSMOS, SCIENCE FICTION AND THEOLOGY.
- 31 R.T. ALLEN: ABSTRACT OF Ph.D. THESIS - TRANSCENDENCE AND IMMANENCE IN
THE PHILOSOPHY OF MICHAEL POLANYI AND CHRISTIAN THEISM.
- 32 DRU SCOTT: REVIEW OF PRE/TEXT.
- 34 ROBIN HODGKIN: EXTRACT FROM PRE/TEXT ARTICLE - MAKING SENSE AND
THE MEANS FOR DOING SO.
- 37 INFORMATION ABOUT CONTRIBUTORS.
- 38 CONVIVIAM MEMBERSHIP LIST.
- 39 NOTE ABOUT MEMBERSHIP AND SUBSCRIPTIONS.

Sent out by Joan Crewdson

12 Cunliffe Close,
Oxford. OX2. 7BL
Oxford (0865) 53661

NEWS AND NOTES.

Pre/Text: Interdisciplinary Journal of Rhetoric. Vol 2 Spring-Fall 1981 Nos 1-2, Guest Editor Sam Watson. This special issue, devoted to Michael Polanyi is now out. It is obtainable, 6 dollars (U.S.A.) 10 dollars (foreign) from The Editor, Pre/Text, Dept of English, Eastern Illinois University, Charleston, Illinois 61920. Elsewhere in this Newsletter an extract from Robin Hodgkin's article is reproduced with his permission. It is also hoped to include a general review of the Journal.

Dr. Aaron Milavec's new book is now available in America: To Empower as Jesus Did: Acquiring Spiritual Power through Apprenticeship.

Lewiston, N.Y. 14092, The Edwin Mellen Press, 1982. (462 pp). It is hoped to provide a short review of this book in the next issue of Convivium.

Dr Milavec writes:

The germinal ideas for the preparation of this book are derived from the epistemology and sociology of human knowing as explicated by Polanyi..... The task that I have set for myself in this book is to spell out how the two key processes, systematic apprenticeships and the dynamics of discovery, form the backbone for a corrected understanding of Christianity. In so doing, I intend to provide a new working model so that Christians might again appreciate the human dynamics whereby Jesus Christ transmitted his own personal powers to his disciples and they, in their turn, transmitted and transmuted what they had received for future generations.

Dr Milavec also offers any readers of Convivium who would care to review his book in a stated journal an advanced, complimentary copy, by writing to him before April 21st, 1982. After that copies can be obtained from the publisher. (See list of members for his address.)

Zygon, Journal of Religion and Science. A special issue on Polanyi is scheduled for March, 1982, which includes papers from the Polanyi consultation at the AAR meeting in Dallas, December, 1981. Unfortunately, the latest copies of Zygon received by the Oxford Bodleian Library and by Pusey House Library are June, 1981. It has therefore not been possible to give details of this special issue, though elsewhere in this Newsletter there is an abstract of the AAR papers, taken from the American Polanyi Society Newsletter. If any member of Convivium sees Zygon and would be prepared to review or summarise the material of this special issue for the October Number, we would all be grateful. The subscription for this Quarterly Journal is 15 dollars a year, payable to Wilfred Laurier University Press, Waterloo, Ontario, Canada N2L 3C5.

NEWS CULLED FROM THE AMERICAN POLANYI SOCIETY NEWSLETTER, No 1, Fall 1981.

At a meeting of the American Academy of Religion (AAR) in December, 1981, three sessions were given to papers dealing with the thought of

Michael Polanyi and its implications. The theme was, "Polanyian Perspectives on Imagination, Story and the Psycho-Social Dimensions of Religion." Abstracts of some of the papers given are reproduced elsewhere in this Newsletter, together with a report on the Polanyi Archives by Richard Gelwick. At the same Polanyi consultation,

- ** Dr Benjamin Reist spoke about a book by Charles S. McCoy, When Gods Change: Hope for Theology, Abingdon Press, 1980. McCoy's understanding of 'covenantal theology' is shaped by the thought of H. Richard Niebuhr and Michael Polanyi's "account of knowing".
- ** Published in Clinical Uses of Dreams, Jungian Interpretations and Enactments, (Grune and Stratton: N.Y. and London, 1977) a chapter by Dr James Hall, applying Polanyi to psychiatric and psychoanalytic practice.
- ** Prof W.G. Perry, in Forms of Intellectual and Ethical Development (Holt, Reinhart and Winston, N.Y. and London, 1970) uses Polanyi's concept of commitment in P.K. as the philosophical support for his psychological theory of the maturest form of intellectual development. Perry sees in Polanyi an explanation for what he found in his studies, namely, the ability to hold to a belief as true in a relativistic context.
- ** Dr Sam Watson has published "Polanyi and the Contexts of Composing" in Reinventing the Rhetorical Tradition. (L & S Books, 1980)

ELEVENTH HOUR NEWS FROM PROF. BILL SCOTT. (Received within hours of 'going to press'!)

Prof. Scott hopes to visit England in May in connection with his Polanyi biography. He writes that "his work is proceeding on the Polanyi biography, but his grant support calls for matching funds which are becoming increasingly hard to get. If any reader knows of a philanthropic organization or a person of means who might be persuaded to contribute to this project, please pass on the information that cheques should be made out to the Board of Regents, UNR and earmarked (on the cheque or in an accompanying letter) "for matching the NEH offer and to be used for the Polanyi biography." They should be sent to Prof. Wm. T. Scott, Dept of Physics, University of Nevada, Reno, N.V. 89557. The National Endowment for the Humanities will then add an equal amount to the total grant. Most needed are funds to support two years' part time work of Prof. Scott's biographical assistant Monica Tobin."

Prof. Scott has also sent two contributions to Convivium: 1) An account of errors on facts about the Polanyi family in the chapter entitled "The Polanyis" of Peter Drucker's autobiography, Adventures of a Bystander, (Harper & Row, N.Y. 1978) pp 123/140. 2) Excerpt from unpublished MS of Michael Polanyi of 1939, which he thinks will be of interest to readers of Convivium. These are included elsewhere in the Newsletter.

'PERSONAL KNOWLEDGE' AND POETIC IMAGINATION I

(The first of two articles) by Dr. Frances Stevens.

The take-off point for the argument in Personal Knowledge is the ground of the 'exact' sciences. Here Polanyi claims, and is concerned throughout the book to maintain, first, that most people, including the majority of scientists, have an illusory notion of pure - that is, totally impersonal - objectivity, which they believe to be most clearly demonstrated in the study of physical science; secondly, that this illusion seriously impedes our knowledge of reality. The field of his discourse comprises science (including the descriptive sciences), mathematics, logic, the nature of language, sociology, art and religion. He sees science as part of a continuum which includes the creative arts, on which at any point the act of knowing is a simultaneous combination of spontaneous perception, personal commitment, and a leap in the dark, all the result of a continual groping after a reality sensed but not known until experienced.

Since he affirms the essential creativity of all knowledge and also emphasises the continuity of the realms of knowledge, Polanyi makes frequent reference to music, literature, painting - and thus, of necessity, to work recognisably guided by the imagination. (It is, incidentally, interesting to note that, although he lays stress on the unspicifiable constituent in activities such as brewing, and on the uniquely valuable learning processes of apprenticeship, the arts he mentions are, almost exclusively, the 'fine' arts. Artist/craftsmen like Morris or Lethaby would have seen here a regrettable gap in the continuum). His main preoccupation, however, being with the invasion and impoverishment of all departments of modern thought by the supposed principles of scientific method, the arts tend to appear as analogical examples of the creative nature of the act of knowing - or as evidence of the impartiality of his thesis - rather than central objects of his attention. It seemed therefore potentially profitable to make some further exploration of one of the arts, poetry, in the light of Personal Knowledge.

I shall do this by first presenting the testimony of certain poets to the nature of poetic creation, and then considering the personal knowledge exemplified in a few representative poems or passages.

Before reaching this stage, however, I will review those aspects of the book which are particularly applicable to the arts. These may be seen as a spectrum of themes ranging from, at one end, the nature of objectivity, to passion at the other, and enclosing between these limits the themes of creativity, rules of rightness, the relation of theory to experience, mysticism and worship, indwelling and unspecifiability, culture and communication, and originality. In what follows now, I am not attempting to give a comprehensive or exhaustive account of Polanyi's argument, nor am I making a topical anthology. What I shall try to do is to review - that is, re-view - the substance of the book through the medium of my interest in poetic imagination. The account will therefore be skewed rather than eclectic. Under each heading I shall give, at some length, the appropriate part of the argument as I understand it, without any attempt at comment or interpretation. In the concluding one or more paragraphs (usually one) of each section, I add a brief commentary pointing forward to the second part of this essay.

Objectivity

The personal coefficient, says Polanyi, bridges the disjunction between subjectivity and objectivity. True knowledge entails commitment; this commitment is a personal choice, in which the person committed is seeking a datum. The effort of knowing is an effort to submit to reality, and truth can be thought of only by believing it. Originality is seeing more deeply into the heart of things - this 'heart' is the object of committed thought, and the seeking and discovery of it constitute objectivity as distinct from objectivism. In acquiring personal knowledge the thinker reaches out into the incomprehensible; a scientific theory which conforms to reality touches a truth deeper than its author can understand. When thoughts only partially comprehended by their original thinker disclose their significance unexpectedly to later minds, it is a sign of objectivity. The truth of a theory is intrinsic to it - it is not validated from outside. Thus, its 'inherent rational excellence' (a phrase Polanyi actually applies to the theory of relativity), rather

than any supposedly objective proof, is what makes one model of the universe superior to another, as the Copernican was to the Ptolemaic.

Polanyi points out that objectivism gives an illusory hope of stability amid the flux of circumstance by appealing to criteria outside the thinker, and thus supposedly not subject to personal whim and error. Genuine stability, however, is to be found only in the self-reliance of confident thought. The confidence of the thinker is always perilous, for commitment to a believed truth by no means guarantees that truth will prevail. On the contrary, '...the normal outcome of a daring commitment is failure. Or worse still, it may be the success of a vast error; the kind which ... is irresistibly persuasive, since it sweeps away all existing criteria of validity and resets them in its own support ...' (p.324) The risk must nevertheless be taken, and the thinker is saved from the dangers of unlimited intellectual freedom, which leads to apathy and despair, by allegiance to those austere standards which, though self-set, stand for a reality beyond the utmost reach of thought. 'The stage on which we thus resume our full intellectual powers is borrowed from the Christian scheme of Fall and Redemption. Fallen Man is equated to the historically given and subjective condition of our mind, from which we may be saved by the grace of the spirit.' (p.324)

The objectivity of personal commitment applies not only to abstract thinking but to every kind of observation. In each case, the thinker must enter and dwell in the object of thought. This principle holds good for the beholding of animals and human beings. Quite contrary to the suppositions of the behaviourists, who regard an individual purely as the sum of impersonally noted behaviour, we can properly observe any living creature only by identifying ourselves with its centre of action. From this internal position we can then criticise its performance according to our personally set standards.

It is not much to the present purpose to recall that Polanyi has sometimes been accused of exaggerating the extremity, and over-estimating the extent, of mere objectivism among scientific thinkers. More relevantly, we may note that, in discrediting what he sees as the prevalent but erroneous view of objectivity, he implicitly accredits the poet's work; for if science 'can no longer hope to survive on an island of positive facts', neither does poetry, which is part of the rest of man's intellectual heritage, 'sink to the status of

subjective emotionalism'. (p. 134) Relevant also is his observation that Luther's words "Here I stand, and cannot otherwise" could have been uttered by any of the pioneers of science 'or of art... or faith'.

Creativity

Polanyi insists that objectivity, far from being a counsel of self-effacement, is 'a call to the Pygmalion in the mind of man'. (p.5) This latent creativity is by no means the same as mere subjectivity. Kepler, for example, had some mistaken ideas and expressed himself in fanciful terms; yet his ecstatic outburst regarding astronomic discovery conveys a true notion of the method and nature of science. Our joy in seeing things, our curiosity, the straining of our senses, are 'proper strivings' to find meaning in experience. These are at first blind gropings; but from such gropings has emerged, by slow degrees, the great structure of thought which is our culture. Conceptual thinking originates in an intellectual discomfort; the thinker, as he creates, is guided by what he creates, yet also reshapes his creation in the light of the guidance it has itself afforded.

Before commitment to action there is a moment of hesitancy, a 'doubt'. Such hesitations occur in all heuristic striving, and can be observed from the level of an animal's momentary indecision to that of a poet's successive attempts to get a line right. The unseen goal cannot be defined, but the creator - scientist, artist or philosopher - senses when he is approaching it. Exploration is, however, a gamble, and the explorer cannot tell exactly what or how much he is putting at risk.

It seems that the earliest stage of human awareness is a 'selfless subjectivity' - a stage at which there is no clear distinction between self and non-self. While this stage lasts, there can be no attempt to form judgements or interpretations of the world, for there is no consciousness of 'world'. To enter into a mental relationship with the world, one must separate oneself from it, and thus become a person. Even at the most primitive stage, that of mere perception, the process of separation can give rise to strain and conflict. The more developed form of heuristic striving, towards a reality apprehended but not known, is often a severe struggle attended by conflict and error, and release from the engendered tension is marked by ecstatic joy.

Thought is essentially creative; no mechanistic model can account for it. Creativity, though intrinsic to all original thought and action, is seen at its highest and clearest in works of genius, and confrontation with genius means that we are face to face with the originative power of life. In the arts, genius gives interpretations of the universe - such as the book of Genesis or the frescoes of Michelangelo - which are not factual but true in a more fundamental sense, expressing a vision of the nature of things.

Men and women, being creative, have thoughts; inanimate objects, though interacting, have not. 'We speak of the thoughts Shakespeare had while writing his plays, and not of the thoughts of hydrochloric acid dissolving zinc, because men think and acids don't.' Wherever life is found, there self-assertion, precursor of thought, ^(p.389) begins to stir. The bacillus's already complex existence 'sets up a centre of self-interest against the drift of meaningless happenings;' and man stands at one end of a line which leads, through many ^(p.387) gradations, from submicroscopic living particles to creative human beings. The child's understanding of the world (here Polanyi draws considerably on the work of Piaget) first takes the form of a series of isolated, irreversible acts of comprehension; but gradually there emerges an interpretative framework which makes possible logical and coherent thinking. Creative thought is a two-way process; the scientist, for example, achieves discovery, but in so doing modifies the nature of his discovering intelligence; he is guided by intimations of a hidden reality. So it is with every form of knowledge; intellectual growth takes place through creative acts of the mind.

There is no need to establish the relationship of this section to the understanding of poetic imagination, for poetry is, by definition, creative. We may be, however, in some danger of losing sight of the simplicity of its primitive function; it is timely to remind ourselves that the Greek verb poieein means to make, and that in earlier English the term for the poet is maker.

Rules of rightness

Since the theme of the book is personal knowledge, Polanyi understandably pays considerable attention to the formal systems which thinkers have evolved to contain and discipline their speculations and provide guidelines for development within a particular heuristic field. These containing systems he calls rules of rightness, or maxims. They are recognisable and significant patterns of operation which may become conventions, as in the rules of a game. They may be closely associated with experience, as in the early developments of number systems. At a more sophisticated stage, however, it may come about that reasoning separates itself from experience, so that the formal theoretical structure becomes self-contained. This is seen particularly in mathematics, which in its advanced forms has resolved itself into 'sets of tautologies formulated within a conventional framework of notations'.

Formalisation may, therefore, as in higher mathematics, move so far from experience as to be irrelevant to it. But if, at the other extreme, it moves too close to experience, it loses the scope to be creative. Art, however realistic or direct, must remain at least at the distance of a representation of conceivable experience, a self-consistent structure.

Rules or maxims increase insight and may give guidance, but they are part of the art or game they govern: they cannot be a substitute for the personal competence of the player or artist. They are, moreover, effective guides to an art only if they can be integrated into a practical knowledge of it. Formalisation must also remain within a framework of personal judgement, as is well illustrated by the geometric theory of crystals, which consolidates the experience to which it is applicable and ignores that to which it is inapplicable. In this can be seen an aesthetic ideal similar to the sensibility exercised in art and art-criticism.

Most thought proceeds, not according to specifiable rules, but by an irreversible process of comprehension, sometimes guided by vague maxims. In the less frequent but extremely important situations where rules of rightness are observable, they operate within a flow of conscious and unconscious awareness.

The operation may be through the visual imagination or by the aid of verbal or other symbolism; or the creative thought may be purely conceptual. These rules occur in many fields - moral and legal, for example, as well as aesthetic. When a person tries to establish and follow rules of rightness in any field, he commits himself to an ideal; a hidden ideal, not to be identified with the particular medium within which his commitment and his striving work. That medium affords the possibility of striving for the ideal, but limits the possibility at the same time.

In this, one of the constituent themes of Personal Knowledge, Polanyi states two of the problems of creation in any medium, from 'exact' science to painting. Clearly, formal structure saves the abstract thinker, the judge, the religious person or the artist from 'a nihilistic freedom of action'. But the two problems are always present: the first, that of finding, for any system of creative thinking, the right location between pure theory and complete immersion in actual events and situations; the second, that of preserving through several transmissions the momentum of the impulse originally contained, and also made manifest by, the system.

The first problem prompts questions concerning the status of kitchen sink drama or action painting; it also recalls Matthew Arnold's caution against mistaking machinery for principle. The second is illustrated by the rejection of a work of Mozart's by the Music Society of Vienne because it contained one dissonance; by the rigidity of the Académie française which provoked the splendid and articulate revolt of the French Romantics; by JONSON'S comments that Spenser writ no language and that Donne, for not keeping of the accent, deserved hanging; by the old bottles of first-century Judaism which could not hold the new wine of Christ. The problem in one of its major forms was expressed with characteristic succinctness and vigour by A.N. Whitehead:

'Every intellectual revolution which has ever stirred humanity into greatness has been a passionate protest against inert ideas. Then, alas, ...it has proceeded by some educational scheme to bind humanity afresh with inert ideas of its own fashioning'.

Relation of theory to experience

Transcendence of experience by theory is present, says Polanyi, in every form of idealisation. As our scrutiny passes from the descriptive sciences to the exact sciences and thence to mathematics, we find that experience is less and less discernible as their basis. The first group has an abundance of experiential detail; in the second, this has dwindled to bare pointer-readings; in mathematics, experience can no longer be directly observed. But however much or little the experiential component is discernible, the creative thinker is committed to a vision of reality beyond experience. This commitment makes the person vulnerable to contempt and neglect: unbelief evokes an echo in us, and shakes our faith in our own convictions.

The relation between experience and theory can be seen in several manifestations: in the relationship, for example, of observed facts to legal facts; of factual experience to a work of art based on it; or of empirical facts to mathematical concepts. As a theme, external experience is essential to both mathematics and art, but works in both these fields convey their own internal thought, which is their *raison d'être*. A person prepared to inhabit their framework accepts it and dwells in it for the sake of this internal thought.

Commitment is not a simple matter. It involves a process of interaction between two levels of the self, and is characterised by self-compulsion, in which the more judicious and dynamic part takes charge and propels the whole being towards the undefined and indefinable discovery. The process of interaction followed by decision always implies a change, large or small, in interpretation or outlook. Such changes are hazardous, but the chance must be taken. At the brink of conversion from one system to another, there is internal conflict, which is resolved sometimes in favour of rationality, as when we classify ocular testimony as an optical illusion; sometimes in favour of actual perception, as was done by the impressionist painters. Most frequently, a fundamental change in the observer is slow to find acceptance by others.

Commitment is impassioned, taking intellectual beauty as its guide to reality. There is no sharp cleavage between science and art if truth is taken to be equivalent to right judgement and its entailed commitment. The passage from the one to the other is a progress from observing facts within a strict theoretical framework to a state of deeper indwelling within a framework more conspicuously significant for its system of internal relationships - a structure which recalls and re-creates experience rather than dealing directly with it. Commitment is the same, but is more profound in the latter situation. Moreover, to acquire familiarity with new forms of art is to undergo wider and more complex existential changes than those demanded in the understanding and acceptance of a new scientific theory.

Like Polanyi's exposition of creativity, this part of his argument is manifestly relevant to the subject of imagination, and poetic imagination in particular. If theory be taken in its widest sense, as Polanyi takes it, so that it embraces not only scientific and mathematical propositions and reasoning, but also the form, imagery, theme etc. of verbal creations, the interest and importance of the relation of theory to experience will need no stressing.

Mysticism and worship

The acceptance of advanced physical and mathematical theories necessarily entails, says Polanyi, our acknowledgement of their surpassing beauty and profundity. At this level, scientists and mathematicians are listening to the peculiar intellectual harmonies which reveal the presence of objective truth, much as the Pythagoreans listened to the music of the spheres in a state of mystic communion.

It is readily seen that imagination in art is inspired by contacts with experience. But so, though less obviously, is the conceptual imagination. Like works of imaginative art, mathematical constructions are conceived by the imagination; they will tend therefore to disclose those hidden principles of the experienced world of which some scattered traces had first stimulated the imaginative powers by which these constructions were conceived.' (p.46) This

glimpse, in art or science, of hidden principles sets up an excitement; desire stimulates the imagination to dwell on the means of satisfying it; and the play of imagination stimulates further desire.

'Works of art or social imperatives have a manifest emotional force, evoked within an articulate culture to which no speechless being has access.' (p.133) And not only that - the language of affirmation itself is emotional, and the articulation of a great scientific theory is, among other things, an expression of delight. The beauty of a scientific theory and of a work of art is in both cases a token of reality, in the one empirical, in the other aesthetic. This intellectual beauty must be distinguished from formal elegance, and the test of the difference, which is supremely important, is a delicate one.

The vision of intellectual beauty need not remain private; it can be communicated and re-experienced, though at one remove from the original creative act. All true appreciation of science by the public comes from the sensing of a hidden beauty.

'Nowhere,' Polanyi asserts, 'is intellectual beauty so deeply felt and fastidiously appreciated in its various grades and qualities as in mathematics, and only the informal appreciation of mathematical value can distinguish what is mathematics from a welter of formally similar, yet altogether trivial statements and operations.' (p.138) This kind of appreciation has a long history. The extravagant Pythagorean traditions stemmed from the kinship which exists between different kinds of order and beauty, 'whether discovered in nature, conceived in mathematics, or imaginatively created by art' (p.193). Perception of beauty generates an emotion which strains beyond the forms that contain it; the most radical manifestation of this urge is the act of ecstatic vision. Therefore religious worship - like mathematics, science and the fine arts - may be seen as a heuristic vision. The capacity for religious knowing seems to be present in all children, and perhaps is present, even if latent, in everyone; and religious conversion is comparable to scientific or mathematical discovery or the illumination of art.

The continuum stretching from biology to religion resembles that which stretches from the self-determination of living particles to the freedom and autonomy of personal knowledge; an ascending scale of generalisation, leading up to the point of the study of human greatness, will make the biologist's relation to his subject-matter become that between man and his terrestrial and cosmic environment.

The act of appreciating order and beauty - whether in the lowliest form of life or in a work of art - is itself a phenomenon possessing these same qualities. The harmony and coherence must be felt and lived in - they cannot be separated from the experiencing self. This is true above all of man's relationship to the moral and intellectual 'firmament' of his existence. Intimations of truth and greatness call forth a vigorous response. But this happens only as long as the harmony of experienced and experiencer persists. If a person separates himself from the whole and examines as a detached observer what it is to which he is responding, the intimations, and his answering powers, shrink into nothingness. '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'. Through its promptings, the 'firmament' offers a brief invitation to human beings to take the dangerous step of committing themselves to a journey towards an end and fulfilment which cannot be conceived. 'And that is also, I believe, how a Christian is placed when worshipping God.' (p.405)

The Platonic strain evident in this part of Polanyi's argument is directly opposite to the romantic tradition in poetry (and, with a different emphasis, to the classical as well). It may be noted, in particular, that his insistence on the need to distinguish between real intellectual beauty and a mere formal elegance - the true and false florimel, we might almost call them - recalls Plato's on the human proclivity to mistake shadows, or the shadows of shadows, for reality.

Indwelling and unspecificability

Truth is, then, found by dwelling in it, says Polanyi. An illustration of the nature of indwelling is given by our use of tools: as we 'pour ourselves' into a tool it becomes, reciprocally, an extension of our body. This reciprocity, particularly in the realm of thought, is not easily achieved, for usually we have no clear notion of what we are supposing, and attempts to formulate it do not clarify our purpose. The constituents of skilful action and knowledge all point beyond themselves, and acquire meaning only in a context - a context which is itself meaningful.

The unspecificability of personal knowledge is well seen in the spectacle of Renoir, continuing to paint characteristically in old age when he could no longer hold the brush in his fingers. Skill and vision no longer depended upon his fingers; these qualities had become abstract and wholly unspecificable. Unspecificability is seen, similarly, in the study of anatomy. A limitless number of dissections will give no knowledge even remotely resembling the function of an organ within the body: from the process of dissecting, the imagination must reconstruct a three-dimensional picture of the organ and explore mentally its connexions with surrounding areas. Thus, although it may at first seem that the aim of reflecting on the ineffable must be to eliminate our sense of the inadequacy of representation, it is in fact quite the contrary. Such reflecting evokes that sense even more vividly; it makes us persevere in the direction of greater precision, while at the same time pondering on the inadequacy of the attempt.

To establish the premisses of mental achievement (in science, for example, or music, or law), the first step is to acknowledge its authentic instances. These instances do not denote anything - they are. Colours or sounds articulate their own system of internal relationships: they are sensuous wholes, which do not point beyond themselves. In this respect, as in others, art is continuous with science, the difference being that, in the arts, the thinker participates more deeply in the object of thought.

The task of inducing intelligent contemplation of arts such as music and drama (a task comparable with the teaching of science) is to enable a person to surrender himself to them. In achieving such surrender, the satisfaction of gaining intellectual control over the external world is linked to the satisfaction of gaining control over ourselves.

The conceptual framework necessary in order to contain and give form to the intimations of reality is also a screen which hides this reality. That questing towards the unspecifiable which we know as contemplation makes the screen transparent. Instead of 'moving through' experience we instantaneously enter it; instead of handling things we become immersed in them. Contemplation, which transcends personality, appears egocentric if the emphasis is on the visionary act, selfless if it is on the submergence of the person. The indwelling and bursting forth which characterises the experience of art lies somewhere between science and worship. To the quality of 'home' residing in the articulate systems of art, morality, worship, and science, we owe our mental existence.

The meaning of a tune is an experienced whole, not the sum of its particular sounds. Somewhat similarly, we understand what an animal is doing and knowing only by being subsidiarily aware of the particulars of its behaviour in relation to our focal awareness of the animal as an individual. The unique totality of the individual is seen even in primitive forms of life; the morphogenetic principle observable in the sea-urchin is the 'primordial member of an ascending series of homologous processes which can be understood only as the resourceful achievement of a comprehensive rightness'. (p 340)

Every process of life carries the risk of failure. Seeing is likewise foreseeing, and therefore is also believing; perception involves judgement and the possibility of error. Intellectual commitment is, consequently, sustained by hope, not demonstrable certainty; and it is none the less firmly sustained for that.

Polanyi's exposition of this theme is so frequently and explicitly concerned with art that its relevance to poetic imagination hardly needs indicating. It is sufficient to observe here, in anticipation of the second part of this essay, that artists in every medium and poets in particular have repeatedly testified to their sense that what they expressed was a pointer to the unspecifiable. Since music is the least specifiable of the arts, this is part of what Walter Pater meant when he said that all art constantly aspired towards the condition of music.

Incompleteness of utterance

According to Polanyi, the counterpart of unspecifiability is inarticulateness. He shows that this leads us to a paradox of formalised intelligence; it develops by acquiring formal instruments, such as number and speech; yet the indwelling - the pervasive participation - takes place by virtue of an art essentially inarticulate. The paradox can be resolved by assuming that articulation is always incomplete. This is no defect; for, in order to describe experience more fully, language must be less precise.

There are times when the speaker does not quite know what he is talking about. This description embraces two extremely different cases. The first arises from lack of skill in language, so that articulation impedes the tacit thinking processes. In the second, our understanding cannot keep up with the symbolic operations; as they move under their own momentum, they anticipate novel modes of thought. Symbolic systems are immensely alluring to the thinker. They are 'a tool of boundless power', but the power is charged with peril. Verbal speculation can uncover a vast repository of knowledge and generate important new problems; it can also issue in mere sophistry.

Because of this inability either to know completely what we are saying or to say all we know, we reach out towards (but never quite achieve) adequate language. Verbal artists, says Polanyi, understand the necessarily metaphorical nature of language; they therefore allow a constant interplay of metaphor, keeping their attention focussed on the totality of their conception.

The establishment of verbal meaning - a lifelong process - is comparable to that which involves the interpretation and re-interpretation of sensory clues. This process goes on at different levels. Because of the dynamic character of the creative thinker's striving to be articulate, poets, scientists, and scholars are constantly inventing new words or senses of words or turns of speech, which are learnt and used by those who study their work.

A fixed interpretative framework is a means only of assimilating, not of transmuting experience. Counting is a paradigm of such a framework, for counting leaves its framework (the numbers used in counting) unchanged. But the originality of new mathematical notations to cover new conceptions, or of poetic language, bears witness to a framework which is being adapted to comprise the lessons of a new experience. Just as intellectual beauty is to be distinguished from formal elegance, so new insight must be distinguished from a formal advance in articulation. Statement of the highest order carries an inbuilt uncertainty of meaning. Yet every genuine affirmation has to be tacitly endorsed, even amid the consciousness of its inadequacy and the possibility of error. As a tune is not the sum of its particulars, so 'the mind is not an aggregate of focally known manifestations, but that on which we focus while being subsidiarily aware of its manifestations'. (p.263)

Thought is brought into being and kept alive through the invention of symbolic forms.

By proclaiming the generative power, the obliqueness and the concurrent inexhaustibility of meaning and inadequacy of utterance that characterise imaginative language, Polanyi points to the nature of poetic imagination. We may reflect, not for the first time, that the aim of founder members of the Royal Society to reform the language (to bring it to the 'mathematical plainness' desired by Bishop Wilkins) was a major instrument in that dissociation of sensibility which, as Eliot saw it, began in the seventeenth century.

Culture and communication

It is evident that the necessary inadequacy of language is closely connected with the ultimate unspecifiability of knowledge. At the very heart of science, says Polanyi, the art of knowing has remained largely unspecifiable, as is demonstrated by the amount of practical work necessary in the sciences and medicine. But if personal knowledge, because it cannot be specified, is not to die with its discoverer, it must be re-achieved through personal contact. The preservation of such knowledge depends, then, on tradition - on direct transmission from person to person. Thus the maintenance of tradition is an essential part of a culture.

Appetites are concerned with private satisfaction: a passion for mental excellence acknowledges universal obligations. The distinction between the two must be preserved, and submission to the universal constantly practised, if cultural life is to continue. Philistinism is essentially appetitive, and leads to a narrowly utilitarian appraisal of everything. The Marxist revolt against bourgeois philistinism, though its initial revolutionary ardour gave rise to masterpieces of art, is based on an ideology which denies the validity or even the existence of universal standards, and thus rejects that to which the thinker who would achieve personal knowledge is committed. This position is also, though in a different way from the philistine, utilitarian; for it tests everything by the criterion either of ideological conformity or of political expediency. Our culture is threatened at present by both kinds of utilitarianism; crushed between them, the love of pure science is in real danger of being extinguished.

Because tradition is so important, deep feelings, which spring from the very will to survive, are aroused whenever there is pressure on the public to enter a new interpretative framework; for this means a shifting round, and threatened loss, of those traditional elements which give an assurance of personhood. First bewildered, then angry, people resist the innovation; and in conflicts such as those which attended early performances of Stravinsky's music, both sides are indeed fighting for their lives.

Yet, looked at another way, the universal claim of a radical innovation can be seen as a sense of its pre-existence. Pioneers of modern physics, for example, while they had to educate their fellow scientists into the perception and use of the new framework, at the same time assumed that the new sensibility was latent in them. ^aCompatible examples can be found in the field of artistic innovation.

To inhabit a culture it is not necessary - indeed, it is impossible - to know it personally in all its aspects. We see, directly, only a fragment of the whole. But the total culture is around us, and it is possible to sense, and value, the existence of a much larger territory than our immediate one. Thus, without close acquaintance or deep understanding, we can recognise that the Divine Comedy is a great poem, or can respect Beethoven's genius. The messages of a culture come to us through our awareness of the possibility of access to its repositories.

The intercommunications within a culture operate in a 'convivial' relationship. Conviviality in this sense implies, among other things, acceptance of another's judgement of ourselves. When two responsible human beings converse, and refer to common grounds of appraisal, they are acknowledging the superior knowledge of their culture as mediated by its great men. The shared passion for others who are greater releases the riches of mental companionship. The indwelling and commitment already discussed characterises the knowledge of human greatness; it is known only by submission to it, and exists only for those committed to it.

Here, again, Polanyi stirs memories of both Arnold and Whitehead. The 'aliens' of Arnold's culture are akin to Polanyi's great men (and women, one hopes) who both lend authority and give inspiration to the dialogue of humbler thinkers. Whitehead anticipated Polanyi in his firm pronouncement 'Moral education is impossible apart from the habitual vision of greatness ... Now the sense of greatness is an immediate intuition and not the conclusion of an argument'. Less ponderously than Polanyi, he also indicated the existence of the ambient culture:

'We must take it as an unavoidable fact, that God has so made the world that there are more topics desirable for knowledge than any one person can possibly acquirePerhaps, after all, this plethora of material is fortunate; for the world is made interesting by a delightful ignorance of important truths'.

An accompanying strain, that of the vulnerability of original thought, and its dependence for survival on a healthy tradition, recalls Ortega y Gasset's Revolt of the Masses. Polanyi's declaration that the existence of scientific thought in America today is due to the successive migrations of masters who carried the trade secrets is directly in line with Ortega's warning that, if some handful of identifiable people alive in the world at the time of writing were to die simultaneously, civilisation would die too.

Polanyi's view of culture is Arnoldian, not that of the sociologist; The notion of a high culture carried by chosen vessels - with its tacit suggestions, as far as poetry is concerned, of initiation and of the priestly function of the poet - has at certain periods greatly appealed to poets, particularly English poets of the early nineteenth century. The relevance of this to poetic imagination will be explored later.

Originality

Originality consists, according to Polanyi, in recognising newness - either in what was previously quite unknown, or in objects hitherto familiar, but now seen as though for the first time. In this respect, three things are related. The first is the power of our conceptions to identify fresh instances of certain things we know. The second is a function of our perceptive framework, which enables us to see new objects as being new. The third is a function of our appetites, by which we recognise new things as satisfying. The superior reality of a new mathematical conception is to be gauged by its fruitfulness, as is the internal spontaneity of a novel in which, for example, a 'round' personage may unexpectedly reveal features which, though new, flow from the original character and are therefore convincing.

Originality is marked by 'illumination' - that is, the leap by which, in an intellectual process, the logical gap is crossed. The scientist has to risk his whole professional life by committing himself to a series of such leaps. 'Since the Romantic movement, originality has been increasingly recognised as a native endowment which alone enables a person to initiate an essential innovation'.* Where the originitive power of life is *(p. 174) at its highest, we call the phenomenon genius; and confrontation with genius forces us to recognise this power, manifestations of which, in less intense form, could be found on every hand, had we eyes to see. Strictly speaking, it is not actual fruitfulness but rather the intimation of fruitfulness which characterises true discovery: thus the beauty of Einstein's speculations, being new, led to a new view of mathematically defined reality. In respect of originality, science and art are continuous. The main difference between a fictitious mathematical entity, such as a complex number, and a character in a novel, is that the latter has a stronger hold on our imagination. Imaginative power is particularly manifested in poetry. Where great originality is at work, the innovating mind sets itself new, more satisfying standards, and by the very process of innovation modifies itself to as to become more satisfying in the light of those same standards.

In passing from technology and the natural sciences to pure mathematics and music, we move to worlds which, says Polanyi, have no bearing on things outside themselves, but are experienced by indwelling. The autonomous existence which must be lived in to be understood is already found when we arrive at the biological sciences. In the evolutionary process, this stage is reached when life is lived for itself, a stage strictly comparable with artistic originality. Indeed, there is far more similarity between the two than is at first sight discernible.

When Polanyi thus yokes poetry with biology, and identifies originality, in all its manifestations, as the life force which drives the creature, high or low, to self-fulfillment, one is reminded of the Norse legend of Thor, who could not empty the drinking vessel because it contained the ocean itself.

Poets, as we shall see, have again and again testified to their sense that the urge to create, that is to make, was identical with the urge to be - that is, themselves.

Passion

Polanyi claims that the connexion between originality and passion must be close, because originality is by its very nature passionate. The creator, using his personal initiative, is invariably passionate, sometimes to the point of obsessiveness. In routine and undisturbed observations, the passions, though present, are dormant; but every sincere assertion is attended by feelings of personal satisfaction, often linked with the desire to persuade. We invest subjects with our emotions, being drawn to them or repelled by them. If we love or approve of something, we are declaring that it is precious.

Historically, scientists became passionately engaged with the pursuit of successive fundamental guesses about the nature of things, and in the process their intellectual passions were continually and deeply modified. There is a comparable, perhaps even connected, transition in the appreciation of visual arts, right from the Byzantine mosaics to the works of the Impressionists and on to Surrealism. The change originates as a violent irreversible self-conversion, which may generate an almost equally violent process of converting others. It is repeated in milder form when it reaches the stage of public acceptance, and eventually loses its dynamism when the idea has become a commonplace. Our culture has been built up by this passionate thought, and young people who give themselves to it live the emotions it teaches them to feel. The continued transmission of articulate systems depends on the learner's granting of allegiance to the discoverer; this act, like the original discovery, is a passionate self-commitment to the unknown.

Genuine affections must carry their own credentials; they cannot be externally motivated. A living science, seeking satisfaction of the intellectual passions which sustain the self-set values of the scientist, feels its way forward. Nowhere

~~Science~~ is the process more clearly seen than in mathematics; the emotions that rise in the mathematician assure him that the intellectual beauty he perceives reveals a universal truth; he therefore accepts it, and gropes his way towards that truth. A passion for the ideal beauty of science is what gives life to it. Without that passion, there is no science. In the groping and the self-dedication, art has affinities with both science and religion. It resembles science in that the intensity of the originator's heuristic passion exceeds that which is induced by what he has created. On the other hand, a work of art induces an active and comprehensive contemplation more akin to religious devotion. The distinctions, however, are less important than the affinities. In science, art and religion the self-surrender is impassioned, and the guide to reality is intellectual beauty.

The discoverer senses the proximity of something unknown and strives passionately towards it. A primitive form of this passionate striving is seen in an animal given a problem to solve. The narrowness of the artificially created experimental situation tends to key up the animal's state of perplexity at the point of choice to a tension not likely to be found in the wider circumstances of nature. This foreshadows the psychic earthquakes which accompany the rearrangement of thought which has to take place if the chasm which separates a problem from its solution is to be leapt. The passionate urge to fulfil self-set standards is at once determinate, in that the standards are imperative, and indeterminate, since it is fired by an intensification of uniquely personal intimations. This seemingly paradoxical state is present, and accepted without difficulty, whenever we meet human greatness, for in it we recognise both the power of impersonal truth and the greatness of the mind which upholds it.

In writing of passion, Polanyi treats of a region where, at least on first sight, his argument is even more appropriate to art than to science. The passionate quality of much, perhaps most, art needs no demonstration (though we must temper our enthusiasm by remembering Galuppi's toccata which Browning found 'cold music'), and many painters, poets and musicians have lived lives of visible passion.

Polanyi perhaps introduces a novel critical element when he describes the position as heuristic: the question will be considered in the second part of this essay. In that part also, after surveying the positive testimony of poets to the validity of Polanyi's argument, and scrutinizing a few poems in the light of his criteria, I shall conclude by trying to decide whether these criteria are of comprehensive significance, or applicable only to particular periods and particular poets.

THE POLANYI ARCHIVES: A REPORT BY RICHARD GELWICK

A faculty research grant from Stephens College made it possible for me to spend recently four days at the Department of Special Collections, The Joseph Regenstein Library, The University of Chicago investigating the Michael Polanyi papers. Participants in the Polanyi Society will be interested in knowing about the nature of the collection of papers there.

First, the collection is well organized and catalogued by John M. Cash, a historian, who has provided a sixty-five page document GUIDE TO THE PAPERS OF MICHAEL POLANYI. The GUIDE is available at the Special Collections desk. Persons planning to use the papers can write to Mr. Michael Ryan, Chief Archivist, who is well informed on the Polanyi papers, to make arrangements for their visit.

Second, Cash's GUIDE provides a fourteen page biography, an index of selected correspondents such as scientists listed in the WORLD WHO'S WHO IN SCIENCE and key figures in Polanyi's career. The correspondence of Polanyi is arranged chronologically and reveals the extensive intellectual relationships of Polanyi's life. Four sets of correspondence are separated from the general chronology and disclose four major periods of Polanyi's philosophical development. One set is the correspondence with John R. Baker dealing with the organization and activity of the Society for the Freedom of Science. A second set is the correspondence with Joseph H. Oldham, convener of the Moot. This set is especially important for understanding Polanyi's development of PERSONAL KNOWLEDGE out of his concern for freedom and the crisis of the second world war. The third set is the correspondence between Polanyi and Marjorie Grene who appears clearly as the peer and collaborator in the development of Polanyi's philosophy without equal. Polanyi acknowledged this contribution in PERSONAL KNOWLEDGE and elsewhere, and the correspondence vivifies it. The fourth separate set of correspondence is between Polanyi and Frosch and shows Polanyi in his late years struggling to complete his final book vacillating and rejoicing about the joint authorship of MEANING. Besides these special collections of correspondence there are also ones with Michael Polanyi's brother Karl and his mother Cecile, which will undoubtedly prove valuable in understanding better the larger background and context of his thought.

Third, the collection holds twenty-one boxes of manuscripts, there are a total of forty-six in the whole set, also arranged in chronological order. These sources help to see the revisions and direction of change that Polanyi made in his work.

Finally, the special collection also houses the library of Polanyi as it was in his study at Oxford. It is important to ask to see this collection because it is not included in Cash's guide. A few, but not most, of these books contain marginal notes.

The availability of this material is critical to furthering our understanding of Polanyi's thought. It is fortunate for north Americans that these resources are in Chicago, and that they are so well preserved.

EXERPT FROM UNPUBLISHED MANUSCRIPT OF MICHAEL POLANYI 7.12.39.

Physicists say that the supreme proof for the validity of natural laws is that they make the world look tidy. No single piece of evidence is ever adopted against the general idea of a natural law. It is rather assumed that if a single fact or even more than one fact do not fit in, the weakness lies in the crudity of our generalisation which is not profound enough to allow for certain apparent exceptions. It is expected that a super-pattern will be found, revealing a more essential reality, which will comprise and comprehend the old evidence and the new one alike. This feeling of the provisional nature of all our ideas is fundamental. It is the ever vigilant guide of science to new planes of synthesis, in which more and more elements of thought, believed to be essential at a lower level, are resorted by further abstraction.

Take for example the atomic model of Bohr. It contains electrons circling fixed orbits, with definite velocities. At this stage, the energies of atoms seem inseparably connected with the speeds of the orbital motions. And yet in wave mechanics these same energy values reappear, arising as the property of a more abstract substrate: the standing waves of Schrodinger, which reflect the interaction of nucleus and electron without any reference to an orbital motion. In the matrix mechanics of Heisenberg and Dirac even these waves have vanished; yet the same energy values can be deduced. At each of these three stages, a part of the idea which appeared essential before has been reduced to the role of mere scaffolding; it is removed and the essence retained in a purer form.

The idea of tolerance partakes of similar experience. It recognises that our imperfect expressions of truth cannot formulate any parts of it without distorting some other parts; that, therefore, all honest expression of conviction is to be considered as an ore from which closer analysis is likely to be able to extract some truth which perhaps is not recognised anywhere else. In fact it seems likely that the most valuable source of inspiration for religious truth still remains the tradition of the Churches, in spite of all the dross of ritual superstition and the glaring contradictions to common knowledge with which, through which, devotion is expressed. Teachers of the Church may often feel that they would prefer to dispense the wisdom of the higher levels, as it were the Heisenberg-Dirac matrix mechanics of religion, in which the claptrap of Heaven and Hell (which correspond to the picture book level of atomic orbits according to Bohr) as well as the substance of God (which resembles the essentially unobservable waves of Schrodinger) would be resorted (sic) in favour of a purer doctrine of higher abstraction. But they may prefer to teach, as I do myself, in the case of atomic theory, in terms that can be understood, even though these are crude and less true.

NOTE FROM WILLIAM T. SCOTT ON PETER DRUCKER'S ERRORS.

Peter Drucker's recent autobiography has a lively chapter on the Polanyi family, which, while it is probably accurate on Drucker's relatively recent memories of Karl, is grossly in error on a number of facts about the family. Lest any of our readers be tempted to utilise this chapter as source material, I give here those errors I am in a position to correct. Drucker's opinions about the "failure" of the brilliant Polanyis will, I am sure, be severely criticised, but history will have to be the ultimate judge.

Wm. T. Scott.

Peter Drucker's errors in the chapter "The Polanyis" of the autobiography Adventures of a Bystander (Harper & Row, N.Y. 1978), pp 123-140:

1. Page 126. Karl was the 3rd of 6 children, not the 4th of 5: Laura 1882, Adolf 1883, Karl 1886, Sophie 1888, Michael 1891, Paul (birth date unknown, retarded, died before 1920).
2. Pages 127, 140. Michael's aim for society was "liberal" and heavily dependent on economics. His view of an adequate, bearable, but free society was close to that described by Drucker.
3. Page 127. Father Polanyi was born in 1850; the story of his participation in the 1848 revolution, etc., is fabricated. His railway operations were more or less as described; he died in 1905, not 1900. He married Cecilia Wohl in 1881, not 1868. She was not a Russian countess but the daughter of a Rabbi. They met in Vienna, not Zurich.
4. Pages 128-129 Otto Pol was not a Polanyi. (There is no evidence in the standard biographical dictionaries and encyclopaedias that "Otto Pol" as described by Peter Drucker, ever existed.
5. Page 130. Adolph went to Brazil about 1940, not before World War 1, and there is no record of his having changed his name. He died in Brazil, not U.S.A.
6. Pages 130-131. Mousis's given name was Laura. She obtained a Ph.D. in history in Budapest in 1903. I do not know about her tracts. But at the age of 70 she took up history again and wrote a scholarly account of the colonial Captain John Smith's exploits in Hungary.
7. Page 131. Michael never became an assistant to Einstein - by the time he was in Berlin, his correspondence with Einstein had essentially terminated, and the two men hardly ever conversed. His nomination for the Nobel Prize must have been made about 1961 or later, not in the 1920's.
8. Pages 131-132. Michael viewed human existence as an individual dwelling creatively in tradition, rather than being "isolated". "Beyond Nihilism" is not well known, but Personal Knowledge is.
9. Page 132. Ilona and Karl were married in Vienna in 1923, long after Hungary made peace in October 1918. Their daughter Kari was born there.

A POLANYIAN APPROACH TO NATURAL THEOLOGY

R.T.ALLEN

The aim of Natural Theology has always been to help the atheist to cross the logical gap to Theism by getting him to enlarge his existing conceptual framework so as to incorporate at least the possibility of non-spatial, non-temporal and necessary being. The issue of Natural Theology is important, for the denial of its possibility and legitimacy entails an conception of an unnatural God, alien to finite being and quite unrelated to a universe which in no way indicates that it is his work. It also results in a theological Objectivism as repugnant as any Behaviourist psychology of stimulus and response. There can be, then, no dialectic of assimilation and adaptation, for, on the one hand, there is no assimilation of the act and content of special revelation to a man's existing conceptual framework, so that he can begin to understand it; nor, on the other, is there any adaptation of that framework to the novel facts of God's existence and self-revelation. The personal participation of the knower in his knowing must be totally displaced: he does not assimilate revelation to his existing framework nor begin tacitly to adapt the latter to the fact and content of revelation. The result must be a totally impersonal and mechanical epistemology. This is a problem always dodged by Fundamentalism but realised by Islam. The doctrine of verbal inspiration held by both logically debars the legitimacy of translation. Until recently, Islam required the non-Arab Muslim to acquire the language and conceptual framework of classical Arabic before he could read the Qu'ran and assimilate the message of the Prophet. (The NT in part is already a translation from Aramaic to Greek). Now the translator has to adapt his message to the language of his reader, and the reader has to adapt his language and conceptions to the message in order to assimilate it. This happened so long ago with English, that we may not be aware of it. But consider a language such as Yoruba. Speak to the Yorubas in English, Greek or Hebrew and they will not understand. So the Bible has to be translated into Yoruba. How does one render Elohim, Yaweh and Theos? One has to use 'Olorun' the name of the chief deity in Yoruba mythology. But the Yorubas must learn to adapt their conception of Olorun so that they think of him as the God above all gods, and as the only God. Translation is not merely a matter of encoding a message in other words, but of adapting it to other conceptions and of hoping that the reader will also adapt his conceptions to it. This is precisely the theme of Natural Theology.

In revelation God must himself adapt to the existing conceptual frameworks and language of men, unless he is to eliminate the personal apprehension of his message. He must speak Hebrew to Isaiah and the Incarnate Word must speak Aramaic, and use earthly things - vines, bread, wine, shepherds, forgiving fathers - as analogies of heavenly realities. In a more abstract way Natural Theology tries to set this dialectic of assimilation and adaptation going, so that the outsider can adapt his existing framework in order to assimilate theistic conceptions and realities.

On sound Polanyian principles, we must accredit the possibility of a Natural Theology if we are Theists of any description. Yet Polanyi himself said that attempts to prove God's existence are as absurd as attempts to prove the premisses of mathematics or the principles of scientific inference (PK pp.281-2). But this parallel is not really appropriate. For the premisses of mathematics and the principles of scientific inference are *constitutive* of those activities and can be accepted, or presupposed, only uncritically as we engage in mathematics or science. Yet, while belief in God is presupposed by theologising, there is a wider perspective in which it is a theorem to be proved rather than an axiom: i.e. philosophical cosmology or metaphysics or Natural Theology. What Polanyi specifically objected to were naturalistic proofs of miracles which would destroy their nature as miracles (PK p.284). It is quite a different thing to argue that mundane realities point beyond themselves to God.

Polanyi himself suggested a possible basis for Natural Theology:

'The capacity for...skilful religious knowing seems universal, at least in children. Once acquired, the skill is hardly ever lost, but it is rarely mastered at an advanced age without some previous training in childhood', (PK p.282).

'The Christian faith elaborates and renders effective the supernatural aspect of anterior experience in terms of its own internal experience' (PK p.283).

These remarks suggest that men have a natural religious sense as an innate capacity to read the supernatural aspect of natural realities, a sense and an aspect which Christianity focuses and articulates in its own way. If man were not naturally attuned to the supernatural, he could not personally recognise and accredit it when it appears en personne in revelation. Natural Theology may, then, seek to articulate this natural religious sense and the supernatural aspect of mundane realities, so that what both are and what they entail may be more clearly known.

Modern statements of Natural Theology stress its role as producing an apprehension of God in finite beings rather than quasi-mathematical

proofs (see E. Mascall: He Who Is p.73; Existence and Analogy, pp.68-9). This coincides with what Polanyi's quoted remarks imply.

Polanyi, in the latter part of the sentence stating that attempts to prove God's existence are absurd, said that the task of theology is the axiomatization of the Christian faith, (PK pp.281-2). That formula can be adapted to Natural Theology as well. For we can try to see what is presupposed or entailed by a practice which we already accredit. This is precisely what has been done by various authors.

1. J.H. Findley ('Can God's Existence Be Disproved?' in (ed) Flew and MacIntyre, New Essays in Philosophical Theology) argued that the practice of worship presupposes the existence of the God of classical Theism as the only worship-worthy being. (He went on to argue that Necessary Being is incoherent according to modern logic, a position on which he has since radically changed his position, though in a Hegelian rather than a Theist direction.)

2. In his A Rumour of Angels, Chap. 3, Professor P. Berger examines certain 'prototypical human gestures' such as laughter, joy, child-rearing and giving children a sense of security, play and the sense of damnation, which he shows to be 'signals of transcendence' and to point beyond this life and this world to God and Eternity.

3. In Vol. I of his The Faith of A Moralist, A.E. Taylor gave the classic form of the Moral Argument, and showed that the moral life presupposes God and Life Eternal as its goal, initiator and sustainer. Polanyi's own account of philosophy as articulating ultimate beliefs (PK pp. 267, 299) is well exemplified by these essays in Natural Theology.

Furthermore, Polanyi's own empirically based ontology of comprehensive entities can be used by Natural Theology in the classical manner.

1. The structure of comprehensive entities, subject to dual control, is shown to be inherently at risk and liable to breakdown. Polanyi's ontology can thus be employed vividly to show the inherent contingency of mundane beings, as against the curious displacement of necessity upon them by a Positivism which refuses to countenance anything other than immediate and sensible fact and so makes it seem incapable of being otherwise. Polanyi's ontology thus provides a convenient starting point for the Cosmological Argument.

2. Likewise, his doctrine of degrees of reality (TD pp.32-3) can be used as a starting-point for St Thomas' Fourth Way and to point to a Being beyond tacit integration and dual control.

The denial of the possibility of Natural Theology entails that the person is totally passive and so totally displaced in receiving acts of revelation. Objectivism can exist within as well as against theology. On a Polanian position, one must accredit the possibility of a Natural Theology.

College of Education, Sokoto, Nigeria.

Science and derivati
in our time heated form
From either perspective vari
tions or ideologies having no
religious meaning has been erode

Michael Polanyi's thought contains power
logical resources for the development of a
modern scepticism. Essential to his enterpri
term appropriately designating qualities of expe
referring beyond experience according to some crite
meaning belongs to the great family of meanings contriv
Polanyi calls semantic meaning). In contrast to indicati
selves to objects of interest, religious meanings involve us
rituals which simultaneously reveal that which is of personal sig
mate value. We dwell in religious meanings as the consummate exper

Religious meaning is not something we dispassionately choose; we are carr
by religious meaning because it resonates with our emotional depths even as a poem
or other work of art can. Religious meaning integrates seemingly incompatible
emotional and intellectual experiences in a symbol or metaphor that orients us with
respect to issues of ultimate concern.

Religious Imagination and Theological Reflection Dr. Joseph Kroger

According to Polanyi all acts of tacit integration involve the creative activity of
the imagination. The imaginative act consists in achieving and sustaining a coherence
of subsidiary elements of experience which appear incompatible when focally observed
in themselves. Polanyi suggests there is a wide range of integrative acts differing
in degree from the relatively effortless and spontaneous to the relatively difficult
and creative. He has also made what seems to be a rather significant distinction
between two different kinds of integrative acts (the "self-centered" integrations he calls
"natural" and the "self-giving" integrations he calls "transnatural"). There may be
an inconsistency (perhaps even a contradiction) between this earlier and later account
of the structure and dynamics of tacit integration. Whether acts which achieve mean-
ingful integration differ in degree of participation and imaginative effort or differ
in kind is a question which has significant implications for an understanding—from a
Polanyian perspective—of the relationship between religion (faith) and scientific
reflection on religion (theology), as does the further question of the relationship,
if any, between these two kinds of tacit knowing.

This issue can be clarified through an investigation of the myth constructing function
of religious imagination and the demythologizing function of theological reflection,
in as much as the former exemplifies the kind of integrative activity Polanyi calls
"self-giving" and the latter exemplifies the kind he calls "self-centered". It is
argued that Polanyi's distinction represents not two simultaneous and parallel ways of
knowing but two successive moments of any truly human knowledge. The argument is
supported by certain contemporary theological efforts (Wildler, Crites, Wiggins, etc.)
to recover the role of imagination in the theological reflection under the rubric of
"story theology". Wildler's plea for a "theo poetic" which does more justice to the
symbolic and pre-rational way reality is apprehended recognizes that theology, though
primarily a (second order) conceptual enterprise, is grounded in a (first order) basic
substratum of imaginative apprehension. Such a theo poetic endeavor represents a truly
post-critical theology.

(Abstract of Discussion led by Dr. Gelwick, working from Polanyi's themes of the common ground of knowing in science and theology and the heuristic nature of commitment in universal intent.)

Horace Greeley, sociologist of religion has observed that the Star-Trek motion picture and related literature is functioning as a liturgical or morality play within our society. At the same time Carl Sagan, well-known astronomer, has produced a popular presentation of modern science through the media of an imaginary voyage through the cosmos. Both Greeley and Sagan point to a new consciousness of science and religion that provides an experiential basis for theological reflection today. Science fiction and the popularisation of our scientific advances in the exploration of outer space are moving beyond the traditional wall of separation between science and religion and beginning a new mode of scientific and religious interchange.

This new mode is significant because of the way it transcends the historic debates about biblical literalism and the conflicts of science and religion. The common stock of science fiction and extra-terrestrial science today deals with questions of the plurality of worlds, the origins of life in the universe, the meaning of creation, the significance of eternity and the status of values. Investigation of these issues shows a possibility of significant theological exploration without the hindrance of the science-religion conflicts.

Science fiction and "cosmos" has the advantage of working from the assumptions of post-modern science, consequently advancing the level of theological reflection to a world of Einsteinian physics, "DNA" biology, and anti-matter. By moving the context of discussion into the world of advanced science, the significance of theological reflection itself is deepened as the doctrine of the trinity and the meaning of life and death are placed within this context. Science and religion become again more complementary partners in the sense advocated by Whitehead and Polanyi, one that encourages their mutual progress.

ABSTRACT OF THEOLOGY THESIS to be presented in 1982 for LONDON

UNIVERSITY Ph.D. by R.T.Allen.

Transcendence and Immanence in the Philosophy of Michael Polanyi and Christian Theism.

If we distinguish between the essence of Polanyi's philosophy of tacit integration and his incidental remarks, including those on religion, then his philosophy is admirably suited to the articulation of the Christian faith and to its better understanding, especially as regards God's immanence and transcendence.

Polanyi's philosophy allows for and provides an example of a genuine metaphysics. With some reservations, his own account of Christian theology is adequate, and his philosophy allows for and can be used as a Natural Theology to help others to cross the logical gap to Theism.

His account of the tacit dimensions of language provides exactly what is needed for us to understand how we can speak of God who transcends our conceptions. His epistemology of tacit integration applies to our knowledge of God but requires and helps us to articulate a Trinitarian conception of God, and especially of God the Word. An immediate application of Polanyi's ontology would lead to an immanentist conception of God as the World-Soul, but his own central principle of personal knowing and being must lead to the final rejection of any such idea. An eidetic reduction of his ontology to finite being allows for it to be adapted so that we can relate God's being to it.

His conception of indwelling helps us to articulate the mutual indwelling of the Three Persons, the mutual indwelling of God and man in grace, and the Incarnation.

The rabbit and the bramble, both quite limited nuisances in England, when transported to Australia ran riot over huge tracts of country. The same seems to happen to certain words when they get loose in another continent. Brought up to think of rhetoric as a limited nuisance - my Concise Oxford Dictionary sums it up as 'the art of persuasive or impressive speaking or writing; language designed to persuade or impress (often with implication of insincerity, exaggeration etc)' - I find it hard to understand what is happening to it across the Atlantic. Professor Sam Watson explained it to us (see Convivium, March 1981), but I still find it hard.

He told us that rhetoric cannot be defined, but that has conviction, is that rhetors are persons who address issues they do not completely understand - but that is everybody, surely, for who bothers to address issues that he does completely understand? As a discipline, he told us, its centre is comprised of persons actively discovering and addressing questions. I turn again to my little dictionary and read that a rhetorical question is one asked not for information but to produce effect.. Rhetoric has certainly turned over a new leaf! I look through the special number of Pre/Text for more clues-- 'Rhetoric is an intersection of concerns in search of a discipline' - 'the activity in which thought is made' - (what did we miss I wonder when we used to call that 'thinking'?) (One that I did understand was the remark that 'the enterprise (of rhetoric)' now seems to be in a crisis of transition' I think its crisis is the opposite of the crisis which is said to face Britain - rhetoric has lost a role and is looking for an empire.

From this position of insular prejudice it is perhaps not surprising that I found those essays most stimulating in which Rhetoric is least mentioned; in particular those of Dale Cannon and Robin Hodgkin. I can see that both of these writers understand what rhetoric is, unlike me, but their arguments do not depend on this. Both of these writers show clearly the influence of Michael Polanyi, but also, by placing his ideas in new perspectives, illuminate them excitingly.

Dale Cannon writes on 'The Primitive/Civilised Opposition and the Modern Notion of Objectivity: a linkage'. Like Polanyi, Dale Cannon sees the damage done by a misinterpretation of the methods of science; the modern notion of objectivity being a standardised impersonal knowledge which cannot recognise any other kind of knowing. In devaluing the primitive understanding with all its tacit components, this civilised knowledge devalues itself also. In not recognising the otherness of other out-looks, ^{...A} categorising and thus absorbing them, it loses the true objectiv-

ity that comes from the interplay of different individual perspectives to truth, the mutual recognition of each person's unique tacit basis for understanding. The **impersonal**, unitary view of objectivity springs from fear of our own subjectivity, so Cannon writes of the vulnerable, risk-filled acceptance of our own perspective which is needed for true objectivity. In his argument there are many echoes of the Polanyi ideas of commitment, indwelling, conviviality, calling; and these ideas are illuminated and enriched in the setting of Cannon's own experience.

Robin Hodgkin's essay - 'Making Sense and the Means for Doing So' - similarly illuminates Polanyi's concept of a heuristic field by setting it in the context of skill-learning, exploration and adventure. He pictures the field, open to us in such activities, as bounded on the near side by our skills and competence, and on the far side by the horizon, the frontier to the unknown, where our competence will be stretched and tested. The field is also a necessary free space for creative play of thought and action. Now he takes from Winnicott the idea of the 'transitional object', the thing which for a child can be a toy, a tool or a symbol, something that is both 'me' and 'not me'. Objects in the field can be ambiguously toys, tools or symbols, and as symbols can lead the hesitant adventurer to that point of the frontier where a way through may open for him to a new level of experience. Yet a symbol can also be a categorising thing that blocks the way forward.

Here Robin Hodgkin brings in most interestingly Polanyi's image of the probe - the stick with which blindfolded we might tap our way along an unfamiliar path. We would find coming up the stick an expected pattern of information, which fits in and can be assimilated, then an anomaly; something unexpected. 'All "discovery things", from probes to hypotheses, share this attribute of symbols, that they come with known patterns and with the tension that precedes surprise, with what you expect to find and what you do not'.

This I find throws light on Cannon's thesis. It also helps me to see what is wrong with the argument of Meaning. 'I think' says Robin Hodgkin that Polanyi failed to explore symbolism in the way it bears on discovery and meaning. When he and Harry Prosch dealt with metaphors and with symbols in Meaning, they did not follow up the clues which were available in Polanyi's famous analysis of probes. A probe can be used as toy, tool or symbol. It can touch with its ambiguity the reality of some higher order system'. (Symbols work at the frontier.)

There is much to interest Polanyi students in the dozen essays here collected. Some, like Robert Scott's, begin to persuade me towards rhetoric. Professor Sam Watson is to be thanked and congratulated on his guest editorship of this Polanyi Special Issue (even if I still feel that rhetoric has more need of Polanyi than vice versa.)

MAKING SENSE AND THE MEANS FOR DOING SO.

An extract from Robin Hodgkin's article in Pre/Text. (pp 75/78)

"Tools and machines do not merely signify man's imaginativeness and creative reach, and they are certainly not important merely as instruments for the transformation of a malleable earth; they are pregnant symbols in themselves."

Joseph Weizenbaum, Computer Power and Human Reason.

This paper is a partial exploration and development of Michael Polanyi's concept of a heuristic field, a concept which should be indispensable to a theory of education. I shall argue that the concept of competence - i.e., the potentiality of an organism to deploy varied resources and complex skills flexibly in a creative act - is essential to the idea of discovery and creative utterance. Chomsky and Polanyi were, to some extent, allies, not only in their vigorous attack on behaviourism but in their interest in the problem of what it is which constitutes our capacity for articulate action.

It is not surprising that the shade of Karl Lashley and his heroic rats is never far away from this discussion. In the 1940s Lashley was challenging the views of conventional learning theorists on the basis of his experiments with severely brain damaged rats. These rats did not merely respond to stimuli but would show astonishing resourcefulness when faced with problems which they had learned to solve before their brains had been mutilated. Certainly the maze which they had to run was a narrow, cruel kind of heuristic field, but they brought to it that combination of ingenious flexibility and purposiveness which characterises the competence of higher vertebrates.

Polanyi presents us with his concept of a heuristic field in an important passage towards the end of Personal Knowledge. In it one hears echoes of not only Lashley but of C.H. Waddington, Paul Weiss, and of other pioneers in systems thinking whom Polanyi mentions earlier. This is how he expresses his concept:

The lines of force in a heuristic field should stand for an access to an opportunity, and for the obligation and the resolve to make good this opportunity, in spite of its inherent uncertainties.... In order to express correctly this kinship of knowing and living, fields must be interpreted throughout biology in accordance with their finalistic character, as fields of opportunity and of a striving directed towards this opportunity.... By contrast to a field of forces operating on an inanimate system, a field of biological striving stands defined by the fact that we attribute its operation to an active centre. (p 403/4)

Polanyi touches here on many areas of specialist discourse - on embryology and thermodynamics, on cognitive psychology and rhetoric. He lays stress both on "access to" a field of discovery, which is to do with grasping the present, and on "making good this opportunity", which refers to an uncertain achievement in the future. Such ideas - "situatedness" and fitness for the occasion - are familiar to students of rhetoric. In the present paper, however, I shall be using mainly the language of skill learning, of exploration and heuristics, for here lies my own special interest and experience. So I shall say relatively little about articulate expression and the creative

use of language itself. However, the two worlds of doing and speaking are parallel, separate but interdependent. They illuminate each other and depend upon each other, rather - I guess - as do the right and left sides of the human brains.

For an exploring human being, there are always two existential boundaries which correspond to the near and to the far limits of his field of discovery. Any experience of sudden novelty is likely to offer an illustration of this. Imagine someone thrown, naked but surviving, on a desert island; or recollect - an analogous situation - your own first day at school. There is, ready to hand, all that the castaway brings with him, the particular, yet varied skills and attitudes with which he faces the new task. If he is capable of coping, he will be able to deploy these with considerable flexibility. The loose assembly of skills and attitudes which a person brings to a field of opportunity is his competence. In Polanyi's terms such competence can be thought of as the functional or proximal boundary of a field of discovery or creativity, and the person is its active centre. The distal boundary of such a field - up the beach where the palm trees bend to the storm and where a hut might be built, where there might be coconuts - is the frontier. It is both real and problematic and we often speak of it in the subjunctive tense, with hope, apprehension and a wild surmise. The frontier is where the child or the castaway knows that his judgement, skills and resilience are likely to be stretched to the limit by new contingencies. Back at home, back on the ship, before the storm broke, all his competence seemed comfortably adequate for the tasks at hand, but now, with a dozen new challenges looming on the frontier just ahead, that same competence will be stretched almost to breaking point. In addition to all the external problems, feelings are usually much in evidence at the frontier. The adrenalin flows more freely. So competence often involves making sense of the inner, physiological environment as well as the outer one. Thus, when shipwreck threatens, a sharply focussed fear may be cultivated as being more appropriate than a more general terror. These examples are somewhat extreme but the same kind of inner and outer sense-making will be demanded by innumerable more homely contingencies. All fields of exploration, and especially those of youth, are delimited in this way, proximally by a person's competence, and distally, - out yonder - by his or her frontier - the place of apprehension.

COMPETENCE.

Polanyi did not, as far as I know, use the word 'competence' in the sense that I have used it above. He certainly approaches that idea in Knowing and Being, in the section entitled "Heuristics and Language Acquisition". It is here that he comes close to Chomsky and uses the latter's own words about the need for some "initial (concept) that is sufficiently rich to account for the acquisition of language." But Polanyi disagrees with Chomsky -

as many of the readers of this paper might - about the need for postulating some deep structures in the brain meriting the name of grammar. What they more or less agree about concerns the nature of competence for language. Polanyi's key phrase, in which he emphasises the element of play or looseness in the situation preceding any creative linguistic action, is as follows:

Prior to the internal or overt enunciation of the sentence, an aggregate of word unity is partially activated or readied. This shows in the fact that words, destined for a sentence, may be found scrambled in a hasty utterance of it. I regard this as the period described by Poincaré in which the imagination loosens the potential elements for solving a problem. (pp 203/4)

Here we have both the integration of subsidiary units in a linear sequence and also that essential precondition for all creative acts - some degree of looseness or play. Both are indispensable to the exercise of competence.

Why not use Polanyi's term "tacit knowing" or "tacit knowledge" for such competence? The reason for not doing so is that Polanyi gave to these terms a much wider meaning than that which we now require. There can be little doubt that he was at pains to protect the tacit terminology from becoming a portmanteau for mysterious and inexplicable entities and this is a danger which we still need to guard against. Nevertheless, he did give "tacit knowledge" a very wide connotation. I take it to denote all the inherited and acquired information in an individual organism which can be brought to bear on an act of knowing. Both Piaget and Popper use a similarly extended, biologically rooted concept of knowledge. (Piaget Behaviour and Evolution R.K.P. 1978, pp 5/6; Popper, Objective Knowledge, O.U.P. 1972 p 71) Polanyi's tacit knowing, however, is sharply distinguished from Popper's because Polanyi includes the knower as the essential focus of the process and he only allows for objectivity and detachment (analysis of subsidiary elements) as being parenthetical within the larger process.

If, then competence is not equivalent to tacit knowledge, how are the two concepts related? We may think of a person's tacit knowing as resembling the root system of an ancient but living tree, a tree which is in reality you or me or a learning child. Polanyi preferred the participle 'knowing' to 'knowledge', as this emphasises that we are conceptualizing a system rather than a collection of things. Most of the root system is deeply hidden, but it is not, in principle, inaccessible to scientific inquiry. Like the tree's roots, tacit knowing draws on the past and has a bearing on the future shape and health of the knowing organism. We may press the analogy a little further. If you look at the base of the tree, you will see that there are just a few main roots coming together at the trunk. These are relatively easy to examine and to damage and it is these main roots which are analogous to the main chunks of competence which a person possesses. Each area of competence is made up of a loose cluster of skills and subskills, of classified experience and inherited information. There is competence for feeding, for locomotion,

for relating person to person, for musical and graphic experience, for language and for many other complex achievements. They overlap and interact and develop at different rates, but they are, in the main, sufficiently clear in their purposive complexity to merit a generic term. They are, nevertheless, part of the larger, focused totality of tacit knowing and are subject to its influence. In educational terms, especially when we are concerned with young children, these main areas of competence are the principal domains in which teachers and learners interact. It would not be an undue extension of Polanyi's terminology to say that the infants' competences (and most notably its competence for language) are those aspects of its total tacit knowledge which are most open to learning. (See the note under Figure 2)

If we are to give the concept of competence a central place in educational theory, two other shades of meaning must be emphasised. Firstly, as has already been suggested, competence always involves a subtle element of play or looseness. The more subjectively "difficult" an achievement appears to be, the more important it becomes for teachers (or partners) to hold back pressure for its attainment. That is why teachers, among their other gifts, need to be adept at play and at skillfully transmuting the heavy into the light. Secondly a proper understanding of competence should make unnecessary much instrumental talk about "motivations" children. If they can they will want to; unless, as is often the case, something gets in the way. As Polanyi says, "the thought of truth implies a desire for it," and even rats sometimes run mazes out of interest. (P.K. 308) I doubt if it is possible to define any particular competence in terms intrinsic to itself. The loose hierarchy of related skills and subskills and all the bits of information which are integrated in the exercise of particular competence only come together for some complex achievement, such as building a hut or engaging in speech. It is the same with tools: as with all the other gear of making and meaning, to understand them one must dwell in the achievements which they enable.

Information about our Contributors.

Richard Allen is a Lecturer at a College of Education in Nigeria. His thesis on Polanyi, (see abstract) is about to be submitted to London University.

Dr Frances Stevens was a Senior Lecturer at the Leeds University Institute of Education and has been a Lecturer and Research Fellow at various American Universities. She is the author of a number of books and articles. (Part 2 of her article will appear in the October Convivium)

Robin Hodgkin, mountaineer and educator, has for many years been exploring the thought of Michael Polanyi in relation to the need for a new, holistic theory of education.

CONVIVIAM MEMBERSHIP LIST.1982 Subscriptions paid.

- * COULSON Dr. Bill 445, Arenas St. La Jolla, California, 92037 U.S.A. *
 CREWSON Joan 12, Cunliffe Close, Oxford, OX2 2BL.
 DARNLEY E.D. Dept. of Psych. Univ. of Manchester, M13 9PL
 HODGSON Dr P.E. Corpus Christi College, Oxford.
 BARRINGTON INSTITUTE for CHRISTIAN STUDIES, 4, Park Town, Oxford.
 KING Dr. Magda 6, Rochester Terrace, Edinburgh EH10 5AA
 LABIA Dr. J La Vergee, St Brelade, Jersey, C.I.
 MOHARG Dr James, 33, Hazel Avenue Dundee.
 * MILAVEC Dr Aaron, Sacred Heart School of Theology, Hales Corner ^{Wisconsin} WI 53130
 NORTH Prof J.D. Centrale Interfacutet Rijksuniversiteit Kranewag 74 Groningen HOLL
 POLANYI Prof John, 3, Rosedale Rd. Toronto.
 POLANYI Dr. Magda, 22, Uplands Park Rd. Oxford.
 * REEVES Dr. Margery, 38, Norham Rd, Oxford.
 ROBERTSON, Dr. John, Dept of Chemistry, University of Leeds, Leeds, LS2 9JT
 SCOTT, Lady Druilla, Ash House Alde Lane Aldeburgh, Suffolk.
 SHEPPARD, Prof Norman, 5, Horner Close, Norwich, NR2 2LY
 TYRALL, Mr Ernest, 56, Fernagh Ave. Newtonabbey, Co Antrim, N.Ireland.
 WEDGEWOOD Dame Veronica, Whitegate, Alciston Nr Polegate, Sussex.
 WHITELEY, Revd D.E.H. Jesus College, Oxford. OX1 3DW
 * WILSON Revd Dr. K.A. Westminster College, Oxford.
 WILSON R.D. 86, Bramhall Lane South, Bramhall, Stockport Gtr Manchester SK7 2EA

1981 Subscriptions paid.

- ALEXANDER Dr Simon, 5, Park Avenue, Bishopbriggs, Glasgow
 ALLEN Richard T. College of Education, PMB 2129, Sokoto, Nigeria.
 BARRINGTON-WARD Revd Simon, 62, Parkhouse Gardens, Twickenham Mdx TW1 2DE
 BROWNHILL Dr R.J. Dept of Ph. Univ. of Surrey, Guildford, Surrey, GU2 5XH
 BUTLER The Rt. Revd Bishop B.C. St. Edmunds College Old Hall Green, Ware, SG11 1GS
 * HOW Mrs G.M. Faculty of Educ. Univ. of Melbourne, Parkville, Victoria, 3052 Australia
 FIELDING, The Revd M.R. 6, Ravensdon St. Kennington, London S.E.11 4AR
 FORSTER Revd Peter Mosslake Lodge, Rose Lane, Mossley Hill, Liverpool 18.
 HODGKIN Robin Bareppa House, Nr. Falmouth, TR11 5EG
 JONES Dr Hugh, Fachbereich Evangelische Theologie, Univ. Mainz 65, Mainz 1
 KENNEDY, Fr. T. Redemptionist Fathers, P.O. Box 77 Pennant Hills N.S.W. 2120
 LAKE Gordon J. Dept of Humanities, Newcastle-on-Tyne Poly. Newcastle, NE1 8ST
 LEINSTER -MACKAY Dr D. Dept of Ed. Univ. Western Australia, Nedlands, W.Aus. 6009
 POLANYI Mrs P. 31, Maytree Ave. Findon Valley, Worthing W. Sussex.
 PRICE Dr G. Dept. of Liberal Studies in Science, Univ Manchester, M13 9PL
 PUDEEFOOT, Dr John, 79, Orchard Rd, Darlington, Co. Durham DL3 6HR
 ROBINSON Mrs Wendy, 51, Oakthorpe Rd. Oxford 9712 SL Groningen
 SANDERS Dr. Andy, Faculty of Theology, Nieuwe Kigh in't Jatstraat 104/Nederland
 SMART Dr. Patricia, Dept Phy, Univ of Surrey, Guildford, GU2 5XH
 STEVENS Dr. Frances, Picket Rock, Renney Rd. Heybrook Bay Plymouth PL9 0BG
 TORRANCE The Rt. Revd Prof. T.F. 37, Braid Farm, Edinburgh, EH10 6LE
 VICKERS Sir Geoffrey, The Grange, Manor Rd. Goring on Thames. Reading. RG8 9CA
 VON KAHLER Miss Marianne, 10, Lucas Place, Meadow Lane, Iffley Oxford.
 WATSON Mr and Mrs S.D. Jr. 205 Union St, S. Concord, N. Carolina 28025. U.S.A.
 WILSON K.A. P.O.Box 3096 Cape Town 8000 South Africa.
 WETHERICK Dr. N.E. Dept of Psychology Kings College, Old Aberdeen AB9 2UB

1980 (and in a few cases 1979) Subscriptions paid.

- BAKER Dr John, The Mill, Laura Cottag., Bank, Lyndhurst, Hants SO4 7ED
 BENNETT Revd. Robin, 44, William St. New Marston, Oxford, OX3 0ER.
 BOLTON Mrs Angela, 3, Merryfield Way, Storrington, Sussex.
 CORNOCK Stroud, Flat 13, Lyndwood Court, Stoughton, Leicester, LE2 2RS
 FLANAGAN Frank, Mary Immaculate Col. of Ed. South Circular Rd. Limerick, Ireland
 GOWENLOCK Prof B.G. Dept. of Chemistry, Herriot Watt Univ., Currie Edinburgh
 HAGGART The Most Revd Bishop A.M. 19, Eglinton Crescent, Edinburgh, EH12 5BY
 HOLBROOK Dr. David Denmore Lodge, Brunswick Gdns. Cambridge, CB5 8DQ

CONVIVIUM MEMBERSHIP LIST cont.

KAISER Dr. C Western Theological Seminary, Holland Michigan 49423 U.S.A.
 LEDERMAN Dr. B.K. 13, Ardwick Rd. London N.W.2
 LOOSEMORE Alan, 200, Shay Lane, Walton Wakefield, Yorks.
 MCKEE Fr. Dunstan, Priory, Willen Milton Keynes, Bucks MK15 9AH
 MAYS Dr Wolfe, 54, Spath Rd, Didsbury, Manchester M20 8GT
 PAUL The Revd Dr. I 100, Glen Rd. Wishaw, ML2 7NP
 PAGOCK: The Revd Prof. A.R. Clare College, Cambridge.
 PROSCH Prof Harry, 'Skidmore College, Dept Phy. Saratoga Springs, N.Y. 12866 USA
 SILVESTER The Revd H. Holy Trinity Rectory, Platt Lane, Rusholme, Manchester 14
 SLOSS Mrs Margaret 313, Woodstock Rd. Oxford OX2 7NY

NOTE ABOUT MEMBERSHIP AND SUBSCRIPTIONS.

Of our current listed members, four are new members or have rejoined. (See asterisk). I expect that some of those who have not paid since 1979 or 1980 do not wish to remain members but have not remembered to tell me, so I propose to cease sending Convivium to anyone on the last part of the list who does not write before the end of September, 1982, saying they wish to get the October Number. (It occurs to me that, when you have read Part 1 of Frances Stevens' article, you will be very reluctant to miss Part 11, which could be good for trade!) I will be patient with those who have paid something in 1981 until early in 1983, partly because a few very generous benefactors make it possible for us to get out another issue without going into the red.

You will realise that it is almost as cheap to print a hundred copies of Convivium as to print seventy or eighty, so I always have some spares. Please send me the names of any friends who might like to join Convivium, or ask me for a complementary copy to give them in the hope that they may want to join.

As regards subscriptions, with all overseas postage now up to 33p a copy, the cost of typing, printing and posting two copies of Convivium a year to each member is over £2. In view of this, I think it is reasonable to ask for a minimum subscription of £2. Overseas costs, of which we have a high proportion, are nearer to £3, but we would always rather accept a small sub than lose a member.

There is one small matter to which I would like to draw the attention of overseas members. Please do not send subscription cheques made out in dollars. The high cost of cashing American cheques, or for that matter, cheques in any currency other than sterling, is ridiculously high in proportion to the amount received. It is better to send a money order or bank notes in British currency if this is at all possible. SUBSCRIPTIONS DUE JANUARY OF EACH YEAR - £2 where possible. Cheques to J.Crewdson A/c No 67869793. Material for October Issue to Joan Crewdson by the end of September, 1982.