

Tradition & Discovery

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PREFACE

Another Developmental Stage

In The Growth Of Thought On Polanyi

The abundance and richness of thought on Michael Polanyi's philosophy continues to grow. In this issue we focus, with two reviews, on William H. Poteat's Polanyian Meditations: In Search Of A Post-Critical Logic. Poteat's book marks a new stage, not just expository and discussion of implications but the investigation and indwelling of a post-critical terrain in post-critical discourse. To arrive at this stage seems a long distance from 1962 when I worked with Polanyi at the Center For Advanced Studies at Stanford and began writing the first doctoral dissertation on his philosophy. Then I was having to put together Polanyi's bibliography which became the foundation for many others. I still laugh when I remember Polanyi saying he thought he had published about 30 papers, and I tracked down over 100 by searching all the journals with whom he had contact and interest. Polanyi's thought has gone from the exciting stage of the dynamic genius himself to the evoking of a following of serious students - articles, dissertations, conferences, and books. Poteat's work is demanding and challenging even for the well informed Polanyian scholar, and we hope this issue will further its study.

Richard Gelwick

SUBMISSIONS FOR PUBLICATION

News and articles for publication are welcome. If you send news, be sure it is complete - date, author, source, etc. Articles should be within ten pages, single spaced, 3/4 inch margins, and 1 inch top and bottom margins. Put name under the title of the article. The article should be camera ready so it does not have to be retyped.

NEWS AND NOTES

PHILOSOPHY MEETINGS. We are interested in having papers and sessions on Polanyi at the meetings of the American Philosophical Association, the Society of Christian Philosophers, and other professional philosophical groups. DR. RONALD HALL, Philosophy Department, Francis Marion College, Florence, SC 29501 is interested in working with others in developing program proposals for the Eastern division meetings. Persons interested in working on the Eastern APA meetings with Hall should contact him. Persons interested in working on other programs should contact Richard Gelwick.

PROSCH'S NEW BOOK. Harry Prosch's book, Michael Polanyi: A Critical Exposition, was published in October by State University of New York Press. Our Fall issue of IAD have reviews of his book. There will also be a Roundtable session at the December meeting of the American Academy of Religion annual meeting in Boston on Prosch's book. JOHN APCZYNSKI will present a paper on the book and lead the discussion.

1986 MEETING OF THE AMERICAN ACADEMY OF RELIGION. The 1986 meeting of the American Academy of Religion in Atlanta had outstanding sessions on Polanyi. Beginning with The Polanyi Society meeting organized by PHIL MULLINS there were two papers with respondents: MELVIN KEISER, Guilford College presented "Beginning Where We Are: The Post Critical Starting Point," and DONALD MUSSER presented the response. The second paper by JAMES A. HALL, M.D., Dallas, Texas was "Convergences of Polanyi and Jung," and Ronald Hall gave the response. Both papers produced lively discussion. Keiser's paper stressed the experiential roots of theology in our 'mindbodily' (Poteat terminology) life. Hall's paper saw a way of using tacit knowing in understanding Jung's approach to dreams, but Ronald Hall objected that Jung was too much a part of the Cartesian way of thinking. In a Roundtable session, DAVID RUTLEDGE presented the paper on Poteat's book that is included in this issue of IAD.

SCIENCE AND THEOLOGY. DONALD MUSSER, Stetson University, also presented a paper at the Atlanta AAR meeting in the Science-Theology Consultation. The paper compared the approaches of Langdon Gilkey, Ralph Burhoe, and Polanyi. This paper had a very large audience and response.

Everyman Revived: The Common Sense of Michael Polanyi by Drusilla Scott is being reprinted. It can be ordered from the Seminary Co-op Bookstore, 5757 University Ave. Chicago, IL 60637, \$16.50 or ordered directly from the publisher, The Book Guild, 25 High St., Lewes, E. Sussex, England.

1987 AMERICAN ACADEMY OF RELIGION, BOSTON, MASSACHUSETTS, DECEMBER 5-8. Phil Mullins, Coordinator of Religious Studies has announced that the Polanyi Society has requested to meet from 7-12 on Dec. 5. The program will be two papers and a business meeting. The papers are: MARTHA CRUNKLETON, Holy Cross College on "Polanyi, Feminist Issues and Epistemology" with Richard Gelwick as respondent; and ROBERT OSBORN, Duke University on "Polanyi: A Theologian?" with JOSEPH KROGER, St. Michael's College as respondent. There will also be the Roundtable session on Prosch's book led by JOHN APCZYNSKI, St. Bonaventure University. Apczynski's paper is titled "Are Religion and Science Distinct or Dichotomous Realms? Reflections on Prosch's Polanyi." We are hoping that Harry Prosch will be able to join us and respond to the discussion. If you are interested in receiving the papers, write to Phil Mullins (address on p. 2.)

MODERN LANGUAGE ASSOCIATION MEETING, SAN FRANCISCO, CALIFORNIA, DECEMBER 27-30, POLANYI AND THE STUDY OF LITERATURE. The MLA annual meeting will have a session titled "Michael Polanyi and English As A Discipline Of Thought". The session is organized by M. ELIZABETH WALLACE, Northwest Independent Scholars Association. The papers for the session are: PAMELA ROOKS, Iowa State University on "Polanyi and Lawrence," M. Elizabeth Wallace on "Polanyi, Leavis, and Booth," and Phil Mullins, "Polanyi and Hermeneutics." If you are interested in attending the session or in receiving the papers write M. Elizabeth Wallace, 1880 Whitcomb Court, Salem, OR 97304.

POTEAT'S PHILOSOPHY OF RELIGION. The Southeastern Regional meeting of the AAR, March 19-21, Atlanta, Georgia held a session on "William H. Poteat's Philosophy of Religion." The program was: RONALD L. HALL, Francis Marion College on "Owning Our Words," JAMES W. STINES, Appalachian State University, CLAYTON STALNAKER, North Carolina State University, "Poteat and the World," and R. TAYLOR SCOTT, Francis Marion College, "Towards a Geography of the Sacred." Persons interested in these papers should write to James W. Stines, Philosophy and Religion Department, Appalachian State University, Boone, NC 28608.

POLANYI IN COMPUTER MAGAZINE. Several issues ago, I observed the appearance of Michael Polanyi in the novels of Andrew Greeley and Saul Bellow. GREG BEABOUT, Philosophy Department, Marquette University has noticed what may be further evidence of Polanyi's becoming a standard part of our intellectual heritage. In the April, 1986 issue of Profiles, the magazine for Kaypro users, Michael Polanyi turns up as follows: "The other day Jim was looking for a quote from Michael Polanyi (the famous philosopher of science). He was trying to remember what Polanyi said about scientists being 'called to an unthinkable consummation.'

(That's all he could remember.)" The passage then goes on to explain how Jim using his "Free Filer" program could locate this Polanyi quotation in a paper he had written earlier.

POLANYI SPONSORED JOURNAL ON ULTIMATE REALITY, PUBLISHES ARTICLE BY GULICK. In 1975, Michael Polanyi accepted an invitation to be a co-editor of Ultimate Reality and Meaning. The first issue appeared in 1978. Recognizing its connection with Polanyi, the Winter, 1986 issue presented WALTER GULICK'S paper "Michael Polanyi's Theory of Meaning and Reality. Prolegomenon to Exploiting Polanyi's Resources on Ultimate Reality and Meaning." Tibor Horvath, editor of Ultimate Reality and Meaning, in a preface to Gulick's paper recounts Polanyi's association with the periodical and states an intent to publish more articles on Polanyi's thought.

INTERDISCIPLINARY STUDY. UNCHOL-SHIN, Department of Humanities, Eastern Kentucky University presented a paper on "The Structure of Interdisciplinary Knowledge: A Polanyian View" to the Association for Integrative Studies. Unchol-Shin analyzes major conceptual models of interdisciplinary study and shows the need for Polanyi's epistemology to understand how disciplinary wholes are integrated into interdisciplinary wholes.

BUSINESS ETHICS. Pitman Press published in 1985 CHARLES S. MCCOY'S Management of Values: The Ethical Difference in Corporate Policy and Performance. Polanyi is among the many sources of McCoy's approach.

PHYSICS AND THEOLOGY. W. JIM NEIDHART, Physics Dept., New Jersey Institute of Technology is combining his training in physics with studies in theology. Recently he was a Visiting Scholar at Louisville Presbyterian Theological Seminary working with Harold Neblesick. He has published many articles on science and theology applying Polanyi's concepts. One of his most recent articles is in "The Creative Dialogue Between Human Intelligibility and Reality - Relational Aspects of Natural Science and Theology," The Asbury Theological Journal, Fall, 1986.

SOCIAL SCIENCE, KUHN, AND POLANYI. Douglas Ford, 820 Avon Ct, Dixon, CA 95620 has just completed a M.A. thesis in social science at California State University at Sacramento in which he examines Polanyi's influence on social science. He concludes that Polanyi's direct influence has been slight but that through "Kuhn's unintentional popularization and vulgarization" of Polanyi's ideas, the influence has been wide. He also shows how Polanyi's philosophy might provide a missing element in the symbolic interactionist perspective in sociology. Ford also did extensive biographical and bibliographical work that will be helpful to others.

'Intuitions of the Inexpressible'--William Poteat's Polanyian Meditations¹

David W. Rutledge, Furman University

This paper has two purposes: to help the uninitiated reader make his or her way into the difficult text of William Poteat's Polanyian Meditations,² and to thereby further the discussion with Poteat of what a post-critical logic is, and what its importance might be for our intellectual life. I will begin with and concentrate on the first of these aims, but there can be no rigid separation between the two, for to learn how to read such a book takes one quite far in understanding what it is trying to say.

What we need most, I suspect, is simply to read the book--read it again, or for the first time, with care and enough skepticism to argue with Poteat through its pages. Polanyian Meditations is written to work on its readers, to engage them in the author's search as fellow travellers, interlocutors in what he calls "this long colloquy" (ix). To talk about such a book runs the risk of missing its chief reward, which is undergoing an "Orphic dismemberment" of our hypercritical, objectifying, worn-out modern brains. This is not an entirely pleasant experience, as you might imagine, but it is necessary. To use a metaphor: one understands what "health" is not by reading an anatomy textbook, but by experiencing an illness or injury, and then recovering. To think profitably about "logic" in our Cartesian setting is to undertake therapy with one's own mind. My account of the Meditations should be clear, but to the extent that it relieves you of mental cramping and uncramping, it distorts what I take to be Poteat's intent. That intent is nothing less than "reimagining what it means to be a human being," beyond the despairing bewilderment of "the old modern age." So "Read the book."

I am not, however, entirely unsympathetic or unacquainted with the difficulties of a reader of this particular text, so I will offer such help as I can, while asking you not to forget that the book is designedly intractable in important ways, and its message demands that the reading of it not be painless.

I.

In the Prologue (1-10) Poteat traces the thirty-odd year history of his struggle to understand and extend the insights of Michael Polanyi, particularly those expressed in Personal Knowledge (1958). The motive behind this commitment was quite simply that in Polanyi's work Poteat saw the possibility of a way out of the madness, the "dessication of spirit," the radical de-humanizing of our modern intellectuality with which he had already been struggling. In order to begin, we can compress a long and complex story into a sketch of the "critical ideal," which can be seen in the way our culture courts insanity through a blind allegiance to that view of knowledge and reality that was refined in the period from Descartes to Kant, and which is described elsewhere by Poteat as follows:

...it is the perennial temptation of critical thought to demand total explicitness in all things, to bring all background into foreground, to dissolve the tension between the focal and the subsidiary by making everything focal, to dilute the temporal and intentional thickness of perception, to de-historicize thought..., to lighten every shadowy place, to dig up and aerate the roots of our being, to make all interiors exterior, to unsituate all reflection from time and space, to disincarnate mind, to define knowledge as that which can be grasped by thought in an absolutely lucid "moment" without temporal extension, to flatten out all epistemic hierarchy, to homogenize all logical heterogeneity; in short, the temptation of enlightenment is to doubt all our previous certainties and to ground our knowledge strictly upon clarity and distinctness in the present...³

While Poteat assigns Descartes and the Cartesians the responsibility for giving primary impetus to this vision (esp. 252-254), and offers a brief historical sketch of how the linear perspectivism of the Renaissance shaped our western picture of sight (58), he is not interested here in an exhaustive account of how the critical temper developed and spread over the last four hundred years.⁴ What he evokes in the Meditations is the spirit of critical thought that is residually active in our culture, unbeknownst to most of us. He notes, however, his long apprenticeship to the work of Pascal and Descartes, Kierkegaard, Merleau-Ponty, Wittgenstein, and Hannah Arendt (2), which gives some sense of the intellectual tradition from which he launches his critique. Further, Poteat candidly acknowledges that his approach will irritate segments of the professoriat:

I am fully aware of the presumption I exhibit and of the risks I run in proposing to develop this line of argument [contrasting "the conception of reality of classical antiquity with that propagated in biblical modes of thought"]. The dilemma seems to be that those possessed of the linguistic skills and the historical perspectives that might enable them to do this are likely to be overwhelmed by a sense of the complexity of things with which their learning burdens them and are therefore intimidated into silence on such large issues. (102)

Poteat overcomes this hesitation both because his concern is not historical ("my 'text' will (be) the models that I find in my own imagination..." (103); "The object of my polemic is the picture of deracinate reflection that holds us captive," 150) and because the presuppositions of Western academia regarding "knowledge" have been so shaped by the critical ideal that a challenge to its inner coherence will be cut off at once, arrested by the charge to "prove" its case among verifiable historical "facts". Without surrendering intellectual rigor in the least, Poteat carefully avoids entering a debate over "The Enlightenment" in which all terms have been defined exclusively by his adversary. We might think of Kierkegaard's critique of Hegel, or Polanyi's revision of philosophy of science, as analogous examples of this extraterritorial posture.

Though it was this same critical spirit which Polanyi addressed in Personal Knowledge, particularly as it had distorted our vision of science and its achievements, Poteat makes it clear that the Meditations are "not a contribution to Polanyian scholarship and interpretation," but "an attempt to think out of myself, under the influence of now deeply interiorized Polanyian motifs, about matters nowhere dealt with as such in Personal Knowledge" (8). The model Poteat gives of using the work of a major figure as "a point of departure" is Husserl's Cartesian Meditations, to which his meditations are a conscious counterpoint (8). Aside from the Husserlian allusion, Poteat adopts the title "meditation" because it seems apposite to his "reflexive and involute" style, as his thinking "has circled, doubled back" in a "dialectical and agonistic" way (9). I would add that the term seems appropriate as well for the frequent personal examples Poteat uses, and for the attentiveness and tenacity with which he pursues his subject. If in meditation "purity of heart is to will one thing," then this is pure meditation.

So from Michael Polanyi's "massive literature...begging to be deciphered,"⁵ Poteat begins a search for a new view of logic, and does so with careful attention to the manner in which such a search must be conducted, and in which it must be expressed. A note is now in order regarding the various literary strategies which the reader will encounter in the Meditations.

Straightforwardly described, Polanyian Meditations is a sustained reflection on "logic" and related concepts, divided rather arbitrarily into a Prologue and seventeen sections. The book has a minimalist form: there is no "Contents" page, and the sections are not titled or divided, with the exception of one four-page passage at the end of section 3 labelled "Divertissement" (45-49).⁶

When we turn from its form as a book to its linguistic style, the opposite holds: Poteat's writing is what might be called "baroque", by virtue of its density and embellishment, its involution and complex pattern. He himself speaks of the "extraordinarily mixed bag" of rhetoric in the book, and this is accurate. It employs historical analysis (58-59, 206-208, 252-254), detailed etymologies (81-82, 120, 147-148, 246), phenomenological analyses of his own behavior (18, 45, 53, 63), dialogues with his imagined reader (84-88, 118), 'doubling back' and recapitulations (42, 100, 124, 147, 198), word coinages, and an otherwise rich vocabulary ("mindbody," "explicitable," "tonic," "oppugnantly," "embrangled"), mixed images ("the timbre of our bodies," "the color of our voices," "the phrasing of our gaits," "the hue of our glance," 14-15), and, not least, numerous passages of clear exposition and deft philosophical dialectic (9, 50, 99-103, 124-125, 133-136, 174-175, 229-230, etc.). These are only the most obvious of the book's stylistic techniques.

And these devices, or motifs, are not simply used serially, or as elements in a tightly structured whole, but are all employed together throughout the work, as Poteat goes back and forth, crisscrossing his subject from different directions. The overall effect is overwhelming, certainly at first.

Though one does become more acclimated to this text, particularly in its last half, what is most needed is to realize that learning to read this book is a first and major step in appreciating Poteat's argument. In his own introduction to Intellect and Hope, Poteat issued a penetrating caution to the rapid readers of our restless age, and in the Meditations he tells the reader often what she must keep in mind if her reading is to be fruitful (the Prologue, 45-49, 154-157, and especially in the Notes: 293n.2; 294n.5,7; 295n.10,12,14; 297n.1,3; 298n.7). He also has demonstrated an able ear for the subtleties of other writers, their ironies and unvoiced assumptions.⁸ We are therefore dealing with a man who is convinced that understanding is dependent, at a deep level, on learning how not to read, and then how to read again. I am not interested in or able to extract a "theory of reading" from Poteat's work, though it seems to me that "the reader" is a constant, if unspoken, partner in his thinking ("...it is forgotten that reading is itself, after all, a complex, intentional, exegetical feat, absolutely every time it is performed" 164). What I will do is baldly claim that there are two lessons here for the reader of Polanyian Meditations.

The first is that Poteat's endeavor is to free readers from a picture of rationality that estranges them from the deepest levels of their being in this world, and to carry out this task he must use tools of language and intellectual discourse that are already thoroughly infected by the picture he is attacking. It is like talking to a person with plugs in his ears; no matter how interested he is in what you are saying, he simply cannot hear you. Our impediments are not technological or physiological, but intellectual; our minds keep getting in the way of our understanding. Poteat wants us to learn English, and we only speak Cartesian French--that is why he sounds so strange, that is why our head sometimes aches after a session in the Meditations. He deliberately lays aside the simple, clear, well-organized prose on which we have been nursed, to wean us from the neat picture of knowledge in which that prose is embedded. Accepting this disarmament, this dismemberment, learning to obey the new voices we hear in this text, is where we must begin.

The second lesson is less easily put. It is that in reading we enter a world, not mentally, but through our body and mind together, unified, as psyche/soma. The world of meaning that reading opens to us rises within our mindbody as we mindbodily engage with others in endorsing and upholding the meaning and sense of our writing and speaking to one another. The act of reading, when fully understood as part of an intentional net of meaning-making and creative speakers, ceases to be passive or static, ceases to allow you as reader to isolate yourself from the person whose text you are reading, maintaining complete control over the modalities of sense that arise from that text. To the degree that the author addresses you through the text as a living, sentient being with full power of response to his address, and you then hear that address, you have become part of a convivial setting in which learning and knowing can occur, indeed are practically unavoidable. In Poteat's more compelling language:

...I claim that language--our first formal system--has the sinews of our bodies, which had them first; that the grammar, the syntax, the ingenuous choreography of our rhetorical engagement with the world, the meaning, the semantic and metaphorical intentionality of our language are preformed in that of our prelingual mindbodily being in the world, which is their condition of possibility.(9)

...it is we, you and I, moving out of our mindbodily integrity, who interpersonally and convivially shape and form out of the inherited materials at hand and, in speaking and hearing, endorse and uphold the meaning, sense, and "grammar" of our utterances. And this is always so, even when what you say to me, you have said in writing, what I hear from you is what I read, and neither of us is personally known to the other. In the actual speech-act in which I own my words before you and in which you covenant yourself with them, an absolute is constituted. As we jointly institute the assertorial force and logic of our mutual language in the setting of the lively oral-aural reciprocity--mutually upholding the world that in our speaking we have made--a ground is established upon which, while this continues so, no relativizing skepticism can get a foothold. (162)

The skeptical reader of the Enlightenment tradition picks up this text seeking understanding, but holds it at arm's length, distancing herself from its author, refusing to yield his trust, rending the web of meaning with the analytic knife. Poteat's strategies of expression attempt to disarm such a reader by inviting him into a convivial picture of mindbodily integrity, where logical certainty is not achieved, but acknowledged. As we move back and forth in the text, tracking through an argument, hearing the changes rung on familiar words, seeing various pictures of how things hang together, we begin to feel, to mindbodily sense, a build-up of meaning within us, between the text, its author, and us. The literary strategies of the Meditations are the sinews and ligatures by which the reader is bound into the larger mindbody of this textured conversation. They are the animating gestures without which Poteat could not "speak" to us at all.

II.

Accepting now, at least generally, the necessity of the unusual form and style of Polanyian Meditations, we may focus on its content.⁹

The book is a search for a satisfactory logic, and here Poteat's polemical instincts seem absolutely sound. What element of the excessively rationalistic tradition bequeathed us by critical philosophy has a greater mystique than "logic" and the "logical"? For many readers, it will be easy to remember our entrance into our first Logic class as budding philosophy majors, as we walked into the sacred shrine, where at last the secret core of all our longing would be revealed. It seemed an arcane realm, ascetic, pure as a crystal, holding the promise of being the magic key that would unlock all conceptual doors, the final calculus by which all propositions could be judged. ("...Plato...seems to believe that nous--at least "eschatologically"--will have untrammelled access to the very forms of things." 246). Logic class itself was usually enough to dissipate this misty vision, but it has not been eradicated (as a survey of the Encyclopedia of Philosophy shows)¹⁰. Poteat is not suggesting, of course, that there is no legitimate place within human understanding for this traditional sense of logic as a study of the formal principles of reasoning, in order to establish the validity of arguments (246). The Meditations steadily oppose, however, the elevation of this philosophical sub-field to the status of the dominant model of knowing. The crucial flaws of our traditional view of "logic" are to see it as non-temporal, as necessarily constrained within a visual model of experience, and as disincarnate:

The static, visual model dominates the epistemological exposition of the (atemporally) logical structure of the conditions of knowledge, conceived as an established fact. With

no significant deviation from the model of the paradigm knower as the mature, rational, lucid, "objective," ahistorical man...produced by Descartes..., the epistemological subject under investigation in both Hume and Kant has, in their accounts, no living body with a place in the world, has arrived at the present moment of inquiry bearing with him no historical past, and therefore his contemporary mindbodily reality makes no appearance. (175)

By engaging a two-pronged methodology of phenomenology and of etymology (21-24), Poteat uncovers the rootedness of all of his knowings (the "hanging together" of things, the making sense of things) in the living reality of a minded-body (or embodied mind) engaged with the world. Logic is rooted in the pre-formal realities of the human person. When he then asks why this manifest fact of his experience should seem so odd, he discovers that the dependence of our culture on a visual picture of logic has excluded such mindbodily experience from accounts of knowing. This leads him to uncover an alternative picture rooted in auditory faculties which seems more apposite, more fitting to the phenomenologically educed experience of sense-making than is the visual picture. Tracing these pictures, Poteat then clarifies their Greek (visual) and Hebraic (auditory) roots.

To the static, disembodied, timeless visual picture of Platonic/Aristotelian provenance, he contrasts the dynamic, temporal, oral/aural model of reality arising from the Hebraic encounter with Yahweh:

The dabhar of God then does not replicate the particular logoi of an eternal and finite text, and by so doing, conform to...what is eternally true. His dabhar, even as do yours and mine, "makes a world appear." (119)

I have taken the time to do this unravelling in order to show decisively what is missing in the Greek imagination: a paradigmatic speaker whose speech makes a world appear, and who is personal in a sense absolutely unassimilable to any other. Since dabhar is always paradigmatically the speaking word of God--even when it is in a text--it remains alive, lively in an oral-aural context. (122-123)

Returning to Polanyi, Poteat shows how Polanyi's thinking was implicitly informed by this biblical model, and this resource, this dynamic picture of spoken meaning, was what enabled him to escape the distortions of Cartesianism and talk so naturally of personal knowledge.

After a penetrating analysis of religious beliefs in Personal Knowledge (concluding "that his is very bad Yahwist 'theology'," 136), Poteat neatly summarizes Polanyi's central claims:

I want therefore to suggest that the decisive motifs of his thought...are embodied in images of the personal, of knowing as obedience and responsibility, of the fiduciary mode of our being mindbodily in the world, of our calling, and of the inexhaustibility of what is real. (136)

Much of the remainder of the book pursues these various themes, though out of Poteat's reflection, rather than Polanyi's. Here we should note that the entire work of Merleau-Ponty (his phenomenological study of the body and of language) and of the later Wittgenstein (the centrality of language as speech acts) lies beneath Poteat's book as a sub-text, as a conversational partner in his own highly individual efforts (see, for example, 200). The alert reader will hear echoes, particularly of Wittgenstein, throughout the Meditations, and Poteat himself frequently alludes to this. But these are Polanyian meditations, and if I hear correctly, it is to Polanyi's steady focus on the human person, on the creative agent of language and action, that Poteat most readily responds. In bringing together phenomenology's revolutionary revisioning of the body in terms of its intentionality, and Wittgenstein's radical break with traditional ways of

philosophizing "in the mind," Poteat acquires philosophical resources (techniques and forms of reflection) that were unavailable to Michael Polanyi. Careful attention to his own experience, and familiarity with the theological and philosophical tradition which is glaringly absent in these other thinkers, yields a strikingly new species of reflection. While the "metaphorical intentionalities" of all these people (and others as well) are present in his language, Poteat speaks in a distinctive voice, and enables us to see far beyond the giants on whose shoulders he sits.¹¹

Let us look at some of the ways in which Poteat revises this discarnate knower. Note well that he is not building a new epistemological theory in the received sense of that term, for "theory" has traditionally been used in service of the belief in "exhaustive formalization" of reason, the tyrannical insistence that a simple essence of every act of knowing be found and explicitly articulated before we grant it the status of "knowledge." Such a program must logically fail for Poteat, in that it artificially detaches the theoretical realms of reason from the practical, our considerings from our doings (246-250).¹² He asserts in the Prologue that:

...it is my view that rationality...and logic...is more deeply and ubiquitously, though inexplicitly, embedded in our ordinary thinking and doing than we are likely to notice. We fail to notice this because when called upon to reflect upon these facts we are likely to do so in the light of models...formed by critical philosophy... (9)

Thus logic is embedded in ordinary thinking and doing which we ignore under the pressure of the critical picture. He continues:

I argue therefore that...formalized rationality--mathematics and formal logic--derives from and remains parasitical upon the "hanging togetherness" and "sense-making" of our integral mindbodily rootedness in the as yet unreflected world and in our unreflected "thinkings" and doings in that world. (9, 101)

Here he claims that the "highest" (most abstract) types of reflection "derive from" pre-reflective levels of the person, and that this pre-reflective level involves the body and activity, as well as other things. And finally:

...I claim that language--our first formal system--has the sinews of our bodies, which had them first....I contend therefore that when we speak of our world as an object or of our bodies as mere objects in the world, we use and can only use language generated out of a "reality" more archaic...than...mere objects in the world,' namely our lived and lively being in the world prior to speech... (9-10)

Speech as a human activity is here included in Poteat's revisioning. If we grant that activities involve duration, then we have "logic" described in terms of 'the ordinary unconscious (pre-reflective) activities of people who have bodies and talk.' Now my reduction of Poteat's rich prose is destructive of much of his meaning, of course, but it does spotlight one crucial feature of what he is doing: he is returning us to the obvious, the evident, the given world. Over and over he expresses his exasperation at having to work so hard to say what should be obvious, were our understanding not bewitched by the Cartesian picture of logic (43, 174, 180, 246, 248, 250-251, 292, etc.). Reflection is capable of rendering a more faithful account of our experiences of sense-giving and sense-reading, when the "kink" of discarnate thinking in us is released. This results not in a new theory, but in a mental homecoming, in which we "know the place for the first time":

In a sense nothing has changed; everything remains essentially the same. We may go on talking as we pretty much always have...The world remains pretty much what we have always commonsensically thought...What an effortful way to declare that we are incarnate beings, irreducibly carnal spirits, actually existent mindbodily persons! (166)

Let us focus briefly on three features of Poteat's post-critical logic, beginning with its temporality. The hallmark of the visual picture that underlies the critical tradition is that the perceptual moment is, ideally depicted, instantaneous. It is this timelessness which makes possible the analytic power of the visual model of knowledge, for it excludes the possibility of the objects of cognitive experience changing while we investigate them. Experience, however, phenomenologically educed, shows that in audition we cannot exclude temporality; it is part of the very form of hearing. This unavoidable fact of our sensorium is demonstrated by Poteat in an analysis of the first notes of J.S. Bach's First Prelude in C (74, 82, 99, 199, 265).

Clearly the notes "come to pass" in time rather than merely existing as simultaneously co-present in a dead slice of (visual) space. To such an extent they are dynamic as opposed to static... (82)

It is then not too much to suggest that the model that governs Polanyi's use... is a musical one: as in the Bach Prelude the temporal sequence of heard notes C, E, G, C/E, G, C is one in which the logic of melody itself demands that the second C pretends for me the E, G, C that follow it and retrotends for me the C, E, G that precede it. If we did not hear this dynamic pretension and retrotension quite simply, there could be no such thing as music. (99)

Though Poteat probes various details of this musical analogy (as to the necessity or contingency of relationship between the heard notes, etc.), the point is the obvious one that a melody "hangs together," it has a "sense", its parts have a "connectedness" with one another; that is, a melody has a logic, and that logic is inherently temporal. This provides us, then, with another picture of rationality besides the visual picture, and it is one which is quite capable of sustaining the use of all the traditional philosophical terms in logic, such as 'form,' 'order,' 'whole,' 'integrity,' etc. (90). There is no compulsion, then, on the basis of this analysis of experience, to restrict our reflections on logic to a visual model; that we have done so is a matter of history, not of eternal necessity. This treatment, coupled with Poteat's more historically oriented examination of Greek and Hebrew models of "word," opens up an avenue by which the Cartesian view of reason can be abandoned, not as "wrong," but as confused in its pretensions to exclusively represent "the way we know things."

A further feature of this post-critical logic that bears comment is its insistence that our formalizations (from mathematics to ordinary speech) are rooted in our bodies, pure and simple. In a long and beautifully evocative passage (22-23), Poteat traces the "biography" of his mindbodily unity to the archaic forms of measured time that were present in his foetal body even before it "moved for the first time in my mother's womb," forms of measured time that arose from the rhythmic pumping of blood through his small body, by his mother's beating heart. These were the forms that eventually gave rise to his entering the world of "the beating rhythm of patterned and hence meaningful sound." "These forms," he concludes, "are for me, even still for conscious, reflective, critical me, archetypically the forms of measured time: tempo, beat, strophe, pulse" (23). If in our search for "logic" we are seeking the origins in us of notions of order, and measure, and "connectedness," then we should begin at this prelingual level:

There is then an archaic prejudice far older than I in my prereflective and unreflecting mindbody to indwell all form, meaning, and order in the world as the kindred of the first order I have known, the order of my mother's beating heart. And this prejudice that is older than I is nevertheless always present, even at this very moment, as the measured beat of my own heart, the pulsing of my own blood at my throat. (23)

And in a restatement further on:

...it is clear that if the tonic mindbody is the omnipresent and inalienable matrix within which all our acts of meaning-discernment are conceived and brought to term, if, that is to say, the new picture of ourselves as beings in the world actively engaged in asking, seeking, finding, and affirming clearly situates us in the moil and ruck of the world's temporal thickness, marinating there in our own carnal juices, then our rationality can only appear here, inextricably consanguine with our most primitive sentience, motility, and orientation. (246-247)

Poteat's treatment of the "mindbody" clearly depends upon phenomenology's elucidation of the body in terms not of spatiality but of intentionality, but Poteat carries the analysis further in relating it to language (108, 179), in speaking, hearing, and gesturing (172-174). And he is particularly helpful in emphasizing the Polyanian point that the rhythms and muscular movements of our bodies are the logical grounds for the discriminations of sense or meaning in our environments that we constantly make, every day (section 6). And finally, Poteat shows the inadequacy of a notion of spatiality based purely on the visual perspective, and offers in its stead the place from whence all our acts of placing proceed. "Place is a provenience; that in virtue of which I am oriented from within my mindbody--this lively and tonic mindbody with which I have the most intimate relation conceivable..." (271). The hanging togetherness of things is temporal, and it is rooted in a mindbody.

A third revision of traditional understandings of logic is to relate it intrinsically to speech, for language is "our first formal system." Abstract thought is not simply "dressed up" in language in order to go out into the public world; language is not simply a costume, an external decoration for the pure body of thought. Language is ultimately originating: "A sentence uttered makes a world appear" (Auden, 116). Here Poteat's employment of Merleau-Ponty and Wittgenstein allows a major advance beyond Personal Knowledge, for he can begin with an assumption of linguistic reality, of the constitutive power of language, that does not seem to me to be native to Polanyi. Again, the foil against which Poteat works is the critical view (which he calls "language realism", 160) which would make language a formal system, a grammatical calculus of parts that are in principle specifiable (as in the views of Chomsky and Skinner, 175-203). Such a view, of course, ignores the temporal, incarnate nature of speech, but more importantly, it does without the participation of a speaker, in favor of language generated by "mind." The irreducible person, temporally enmeshed in a mindbodily sensing of a convivial order, is the only possible source of the "orderings" of experience that we term "logic."

We can best summarize these central elements of Poteat's picture in the way that he does, by repeating the 'formula' again ("even to the point of incantation, 7):

The picture of the knower's situation is therefore shot through with time, history, place, and intention. He bears within him a past and therefore both the history and contemporary temporal density of his own tonic mindbody; his culture, his "merely" animal preverbal but convivial infancy and childhood are co-present with his contemporary feats of rational judgement...providing real traction in a real world. (175)

III.

This paper has intended to interest you in the scope and novelty of the Meditations, while also easing a bit your entrance into it. It is by no means a comprehensive survey of the many themes Poteat takes up, nor is it a thorough analysis of his central motifs. In order to further the discussion, however, I do want to point to a few of the things that struck me as I read.

The most decisive step in separating Polanyi from philosophical discussions that are still within the Cartesian picture is to see that the meaning of what he

wrote lies in the language he used, not in the "concepts" or "ideas" he introduced. Though Poteat is aware of and occasionally uses terms like "tacit," "hierarchical levels," "emergence" or "connoisseurship," he deals with these only as revelatory of the intentionalities of Polanyi's speech, as indicating a new way of picturing reality. One only has to compare the Meditations with Harry Prosch's recently published study of Polanyi to see and feel the difference, not only of depth, but of fundamental approach.¹³ Perhaps this simply means Poteat has passed through "the linguistic turn" of modern philosophy, but it portends for me that fruitfully working out the consequences of Polanyi's thought will follow the general direction in which Poteat has moved.

The mutually accrediting character of our speaking to and hearing another person, as we own our words and theirs, is explored by Poteat in such sufficient detail that the charges of "irrationalism" frequently thrown at Polanyi now seem not so much wrong as irrelevant. The only unambiguous and unchanging certainty (which is the only kind there is in traditional canons) we can conceive is an eternal stasis, beyond the temporal order. As our fundamentally temporal mind/body context makes such a certainty humanly impossible, then our everyday sense of "sureness" must adhere in something other than "ideas". Poteat places it in the convivial order of language, where, "mutually upholding the world that in our speaking we have made--a ground is established upon which, while this continues so, no relativizing skepticism can get a foothold" (162).

He also makes this same point in discussing Polanyi's use of "fiduciary" as our "relying on" a given world of meaning which we appropriate as our own.

...our very being in the world is fiduciary in structure. Our mindbodily being is fundamentally fiduciary because to be, do, or know any given thing at one moment and on one logical level we have to rely upon some temporally antecedent moment and logically antecedent level. (139-140)

The originating model for such reliance in our culture is the hearing, covenanting response of the person to the dabbar of God (140). This is the ultimate reliance of a person who expresses meaning through speech: knowledge is acknowledgement ("denken ist danken").

Two questions arise concerning Poteat's etymological method. The first is relatively minor, because extrinsic to Poteat's thought and to his use of this method, namely, the debates among professional Hebraicists as to the legitimacy of Thorlief Boman's conclusions regarding Hebrew culture and thought, based on a particular analysis of certain words.¹⁴ Only because the Hebraic model is so important to Poteat's case, and is based so heavily on Boman, do I suggest that the countervailing views of Barr and others need to be examined. Note that Poteat is aware of this type of professional objection, and that to reduce his text to academically undebatable remarks would render it sterile and not worth reading (102-103). I note also, however, that he is careful to remark where legitimate questions arise, and is highly responsible in dealing with such, though his strategy is usually to look for the picture from which such objections or questions are launched. Often they will be seen to have critical presuppositions which, of course, severely weakens the strength of their case. With this in mind, then, let me move from the extrinsic, scholarly questioning of etymological method to one based on Poteat's own post-critical grounds.

Poteat relies a great deal on Eric Partridge's book, Origins: A Short Etymological Dictionary of Modern English, for the resources with which he treats the linguistic setting of logic (21, 294, n.4). Now this struck me as peculiar, given his aims, for in depending on an etymological dictionary to show the dynamism of linguistic utterances (the "metaphorical intentionalities" of words), he is depending on an approach to language which fixes meaning in roots, in specifiable, fully explicated origins, rather than finding meaning in use, in dynamic commerce between human speakers. Granted, there is a "field" of shades of meaning in the various senses which Partridge reports (e.g., contingere = to touch, to touch with, to border on, to reach; 62), but this seems to me to be different from a description of various senses in mindbodily context, as they are actually used by living

speakers. Is not an etymological dictionary a re-construction of how words were once used, based on written records, and necessarily subject to the schema of the reconstructor, the agreed-upon system by which philologists operate in such an endeavor? Dictionaries are, to a degree, models of the discarnate, which have their modern origin in Diderot and Johnson, central figures in the Enlightenment milieu. Given Poteat's attention to the invisible determinants of meaning in a person's thought (e.g., Walter Ong), this question seems legitimate. If the text of the Meditations raises this question, does it also provide possible answers?

I find two ways in which such a question could be answered from the text, though Poteat does not deal focally with the issue as I have raised it. First, it could be argued that he is using the "metaphorical intentionalities" of words, as revealed in etymological dictionaries, as a heuristic device for suggesting dimensions of meaning in our utterances of which we are unaware. He notes that his use of historically conditioned pictures of Greek and Hebraic thought is such a heuristic device, and that this is "an entirely licit mode of philosophical argument" (52). But I could find no corresponding comment regarding his etymological method. There also are places where Poteat seems to clearly deny that etymology functions in simply heuristic fashion: "Whatever the contemporary usage and 'logical' context of a word... the etymology of a word is multivalently implicated in its logical context" (62). And even more boldly he states that "any given sense or use of a word is intentionally bonded to its true (which etymologically speaking is to say, its literal, original) sense, no matter how attenuated... that bond may in a given context be felt to be" (159). And finally, in distinguishing his approach from that of Piaget, he suggests that etymology describes the "truly archaic" logical ground and rationale for mathematical reasoning, inasmuch (I assume) as the intentionalities of words are the logical ground for any and all meaning (24). These quotations suggest that in etymologies we will be taken back to the originating ground of language, or of sense-making, when in other contexts Poteat clearly states his consistent theme that meaning originates in the speech-acts of living persons, mindbodily dwelling in a convivial order. The relation of our dynamic acts to the 'frozen' archaeological data of etymology is unclear to me, which I bring up because the matter is so important to the argument of Meditations.

Now one could simply say that etymologies state the possibilities which real speakers actualize as they speak, but in order for this relation to be a logical relation, we would have to argue that the etymological richness of words is prereflectively (tacitly) present in mindbodily living, whether I have ever seen an etymological dictionary or not. That is, words "carry" with them the residue of their past usages, which are then "incarnated" or "publicized" when a speaker uses those words. This seems sensible, and helps me understand Poteat's discussion of letter and spirit, la langue and la parole, being connaturally present in every speech-act. It seems in some tension, however, with the Wittgensteinian dictum with which Poteat agrees, that "the meaning of a word is its use in the language" (111-200). I invite my fellow readers to clarify this matter for me.

The form and language of this paper expresses my rather partial grasp of all that is being done in Polanyian Meditations. It should also clearly express my intuitive affinity for Poteat's approach and his claims. I believe this text can be tremendously revelatory for everyone interested in how human beings come to know and affirm that knowledge as "logical," and for those 'who are trying to rend the veil that separates them from themselves' (2). Read the book.

NOTES

¹The first part of my title is taken from Raymond Aron's essay, "Max Weber and Michael Polanyi," Intellect and Hope: Essays in the Thought of Michael Polanyi, eds. Thomas A. Langford and William H. Poteat (Durham, N.C.: Duke University Press, 1968), p. 341. I use it simply to express the theme of much of Poteat's book. I note that Poteat uses "intuition" of the mindbodily knower in a number of places (pp. 96, 126, 127, etc.), and while he does not speak of the

"inexpressibility" of personal knowledge, he would agree, I think, that one of the aims of the critical temper is 'to say everything, plainly.'

²William H. Poteat, *Polanyian Meditations. In Search of a Post-Critical Logic* (Durham, N.C.: Duke University Press, 1985). Note that a brief review by James Stines of the manuscript version of *Meditations* appeared in *The Polanyi Society newsletter* (now renamed *Tradition and Discovery*), IX:2 (Winter, 1982), 1-3; and that a portion of the book appeared in *Pre/Text*, 2:1-2 (1981).

³William H. Poteat, "George Steiner: the Extra-Territorial Critic," *Soundings* LV:4 (Winter, 1972) 428.

⁴For an example of such archaeological work, which Poteat does not disdain, see his "Persons and Places: Paradigms in Communication", *Art and Religion as Communication*, eds. James Waddell and F.W. Dillistone (Atlanta: John Knox Press, 1974) 175-195.

⁵The phrase is from Paul Holmer, "Polanyi and Being Reasonable: Some Comments in Review of *Intellect and Hope*," *Soundings* 53 (Spring, 1970) 95-109. This review illustrates how vulnerable Polanyi was to professional philosophic criticism, and how Poteat's style of thought and expression renders him much less vulnerable.

⁶Though "interlude" seems the most appropriate translation of *divertissement*, Cassells also allows "Diversion, pastime, relaxation; recreation, amusement, entertainment; a light piece of music; or embezzlement," the last possibility leaving us somewhat uneasy over this lone directive.

⁷Tender readers might appreciate the sentiments of John Updike, who laments the "virtually 'manic' use of quotation marks" in scholarship on Henry James. Unwittingly, however, he confirms the appositeness of Poteat's style: "I have just read--or, rather, 'read' until my eyelids became abraded 'beyond endurance' by incessant typographical 'pricking'---." Here is a revealing example of that union, that integral embranchment, of mind and body, text and reader, that Poteat is so concerned to demonstrate. "A Mild Complaint," *Hugging the Shore: Essays and Criticism* (N.Y.: Knopf, 1983) 68-69.

⁸In *Meditations* he demonstrates this primarily in relation to Walter Ong (251 ff.). Elsewhere he has exposed "the Cartesian vicissitudes" of anti-Cartesian writers George Steiner (*Soundings*, op. cit.) and Walker Percy, "Reflections on Walker Percy's Theory of Language," in *Strategems for Being: Essays on Walker Percy*, ed. Panthea R. Broughton (Baton Rouge, LA: Louisiana State University Press, 1978).

⁹While it must be remembered that the book is a sustained argument, whose sectioning is arbitrary, Poteat's reflection seems to gather in four major areas, all of which are continually before the author, though one is prominent at each stage.

First, he discusses the oddness of Polanyi's locutions on logical themes, and how reflecting on this oddness reveals a certain picture of knowledge in the critical tradition (sections 1-3).

Second, he extracts alternative pictures of the "hanging together" of conceptual experience (logic) deriving from the experiences of seeing and of hearing, and traces their respective rootage in Greek and Hebrew thought (sections 4-8).

Third, he examines language in the critical and the mindbodily perspectives (sections 9-11). These two middle areas (sections 4-11) seem to me to be especially important to the overall argument.

Fourth, he sketches the subversions of our common sense acknowledgements of meaning by positivism, particularly in the work of Noam Chomsky and Walter Ong, as we read them under the illumination of a new view of logic (sections 12-17). This does little justice to the thoroughness and subtlety of Poteat's thought, but may at least point out the relatedness of parts to the whole.

¹⁰There we find 149 pages devoted to articles on various aspects of "logic," coming at the exact paginal (as well as spiritual?) center of the *Encyclopedia*. If we compare this to two of the *Meditations* central themes, we find just over 18 pages devoted to articles concerning "language," and no article on "body" (though there is a ten-page article on "the mind-body problem"). *The Encyclopedia of Philosophy*, ed. Paul Edwards (N.Y.: Collier-Macmillan, 1966).

¹¹Others have dealt, albeit in different ways, with similar issues. Two books I would recommend are James C. Edwards, *Ethics Without Philosophy. Wittgenstein and the Moral Life* (Tampa: University Press of Florida, 1982), and Richard Rorty, *Philosophy and the Mirror of Nature* (Princeton: Princeton University Press, 1979).

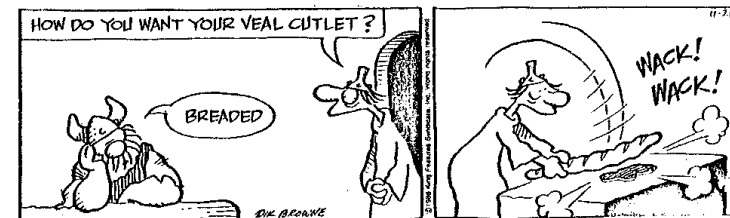
¹²Interestingly enough, Poteat does use "formula" on occasion (247), but it seems to have no technical meaning, but the loose meaning "form of thought," similar to the way "picture" functions.

¹³Harry Prosch, *Michael Polanyi: A Critical Exposition* (Albany State University of New York Press, 1986).

¹⁴See James Barr, *The Semantics of Biblical Language* (New York: Oxford University Press, 1961) and *Biblical Words for Time* (London: SCM Press, 1962).

MORE JERE HOORMAN HUMOR

HAGAR THE HORRIBLE



...only a speaker or listener can mean something by a word, and a word in itself can mean nothing. (PK, 252)

Jere Hoorman, *A HUMOROUS DICTIONARY OF THE TACIT*, Crane Publications, Box 90155, San Diego, CA 92109, \$2.00.

A Review of William H. Poteat's
Polanyian Meditations: In Search of a Post-Critical Logic

Martha A. Crunkleton

In the last year and a half, two big books have appeared on Polanyi, one by Harry Prosch and this one by William Poteat. Of the two, Prosch's is about Polanyi. Poteat's book is not about Polanyi or his thought, but is intensely dependent on Polanyi's thought. Spend some moments thinking about the title of the text itself, and recall similar works with similar titles by Descartes and Husserl. Husserl took up his lifetime of reading Descartes' Meditationes de Prima Philosophia when he wrote his Cartesian Meditations. In Polanyian Meditations, Poteat shows us his lifetime of reading and living with the work of Michael Polanyi. While Polanyi is the most apparent pretext for Poteat's thinking as reflected in this text, other thinkers along with Polanyi also have informed Poteat's thinking, and they appear here: Wittgenstein, Arendt, Kierkegaard, Pascal, and Merleau-Ponty.

Persons fortunate enough to have been Poteat's students at Duke and elsewhere will recognize this group of thinkers immediately. The works of these six formed a sort of canon in Poteat's courses, a canon organized around Poteat's central contention that we are all creatures of the Enlightenment and that this historical claim entails a regnant cultural madness. We have "mastered" nature, made ourselves gods, and have thereby entered into and continued "a ripening flirtation with godhood, with infinity, restlessness, tumult, and madness" (p. 4). This canon, however, is not treated historically by Poteat. Indeed, one of the things it took forever to learn as a student of Poteat's was just this. The "canon" is not a canon to be examined historically and analytically, although one might do that if one wished.

All page citations in this article refer to the text under review (Durham, N.C.: Duke University Press, 1985).

Rather, the "canon" served as a procrustean bed for Poteat's own thought. In this sense, the thinkers in the "canon" had an instrumentality as interlocutors for Poteat, persons with whom he could talk, argue, criticize, and agree. Where other professors might use Merleau-Ponty's oeuvre as a body of thought to be studied and analyzed, Poteat used it as bits and pieces of an ongoing conversation he had been having with Merleau-Ponty about Western culture. Those of us who were his students understood that we were as lucky as we were confused by all this. We did not know all that was going on, but we knew it was important. We also knew that Poteat's ongoing conversation with Polanyi and all the others was not just Poteat's therapy, but was ours as well to the degree we were willing to enter and claim it.

In a similar way, the experience of reading Polanyian Meditations is like working through some "canonical" text in one of Poteat's courses--it is a therapy, and it is sometimes hard to distinguish Poteat's therapeutic work from one's own need for philosophical therapy. The process of therapy in this text by Poteat, the reading as well as the writing of which is of which is a therapeutic task, evokes for the reader another therapeutic text, The Future of an Illusion. There, Freud sought to banish religion and in that banishment he gave us another replacement religion. In Polanyian Meditations, Poteat is undergoing a rigorous talking-cure, too. He wants to undermine the effects of modern thought in the West, especially as those effects are attributable to Cartesian doubt and Renaissance preoccupations with the eye as the paradigmatic sense organ.

Poteat openly states that his book is not a contribution to Polanyi scholarship; he regards it as "...an attempt to think out of myself, under the influence of now deeply interiorized Polanyian motifs, about matters nowhere dealt with as such in Personal Knowledge" (p. 8). Leaving aside for now the troubling terms "deeply interiorized", one wants to counter-claim that the book's contribution to Polanyian scholarship is not of an order of magnitude we usually associate with typical academic publication. Certainly, reading this book informs one's ability to read Polanyi anew in fresh and extraordinary ways. Whether, of course, such a vivification of the life of the mind can be reduced to the level of "scholarship", the reader will have to decide.

What the book tells the reader about the thought of Michael Polanyi it does so indirectly and subversively. This indirection is not just a matter of style. Poteat holds that it is counterproductive to attack the most distressing and troubling issues in philosophy directly. Like Kierkegaard, he recognizes that charging head first against the heavily defended front door of Reason is a tactical error. It is far easier to engage these issues through more accessible side doors.

Wittgenstein told his students that what he said was easy but why he said it was hard. Poteat tells us in this book that what he is saying is hard and he will not disguise the difficulty. If anything, the text requires from the reader a conceptual athleticism and a

willingness to experience uncertainty. One does not always know what Poteat is saying in this book (consider, then, the hubris of reviewing it), and even when one thinks one does understand, the richness of the language, the number of word coinages, the baroque syntax itself, cause the reader to question anew these understandings. At times, reading this book is an intellectual parallel to hanging by two fingers from a subway strap, thrilling and scary. In this way, too, reading this book is like therapy, exhilarating but not especially pleasant.

Like Wittgenstein, Poteat writes because he is captured by a picture. The picture is one he attributes primarily to Descartes but there is plenty of authorial responsibility assigned to others, too. Briefly, the picture is one of deracinate reflection, unembodied cognition; in other words, the mythology of objectivity, the belief that mathematics and formal logic is the paradigm of the connections of reality. The picture is one of human being which thinks and makes the world as disembodied mind and which has accordingly, no logic, no categories appropriate for considering itself as human being. This picture controls even as its limits and barbarisms repel, and this is the picture Poteat wishes to make explicit, to bring to consciousness, so that it may lose its enthralling qualities over him (and over the reader). The search for a post-critical logic, a logic whose outlines are suggested by Poteat's three-decade study of Polanyi's work, then is the movement away from the picture which holds Poteat and the reader captive.

To conduct the search Poteat has a variety of schemes and techniques. One of these is a heavy reliance on etymology. He spends, for example, several pages distinguishing necessity and contingency, noting the transitive and intransitive properties of *needere* and *contingere*, respectively (pp. 81-3). Yet this whole discussion of the linguistic variance of the two terms takes place against a broader, more sonorous backdrop of a discussion the first prelude of Bach's "Well-Tempered Clavier" and Mozart's "Don Giovanni" (pp. 70-92), and this musical distinguishing is part and parcel of the etymological distinguishing. Critics may argue that Poteat in his use of etymological argument falls prey to naturalism or, more likely, to a prelapsarian use of etymology as warrant for some philosophical contention. Does Poteat use etymology to prove his point here or does he use etymology to limn his argument? If one argues he is trying to prove a point, in the garden-variety sense of prove we use in elementary formal logic, one will quickly see that no point is proved and that proof itself seems to be a task Poteat does not take up. If one reads the etymological cases as historical warrants for a point of view not regnant in the Cartesian picture, one is coming closer to the mark perhaps. However, I am inclined to think that the etymological excursions of this text, which are considerable, exemplify a point of view. Here, one can go astray just as if one were a student trying to understand how Poteat was using "canon". His use of canonical texts is literary, not historical. And, his use of etymology, with all the rich historical patina it suggests, is still profoundly literary, not historical. When trying to describe how another picture might look, how another logic might be discussed, these etymological cases serve as sketches, rather than proofs, historical or analytical. If the critic

wishes to contend that such use of etymology is not linguistically sound, let us ask the about the sources of "soundness" and examine for ourselves all the ways etymology is attractive and unattractive to us. We might not use it to prove our case, but we certainly understand how it might show a variety of cases.

Poteat argues, indirectly and with luxuriant etymologies, that another picture might give us a better fit, might feel more appropriate, might enable us to be more fruitful in our thinking about how we make ourselves and the world. He holds throughout that formal logic and mathematics emerge from and depend upon our "mindbodily" rootedness in the world (p. 9). Such a picture acknowledges the very great distance between our abilities to abstract the world, as in mathematics, and the somatic roots, ourselves as embodied beings, upon which such abilities depend for their possibility and existence. Accordingly, when we venerate the abstract to such an extent that we idolize abstraction itself, we ourselves are diminished. This is the Cartesian inheritance Poteat wants to move from even as he fully accredits that this is in many ways still the coin of the realm for the Western philosophical consciousness.

The Cartesian inheritance according to Poteat uniformly opposes ambivalence. What are the sources of this opposition? The philosophical and literary archaeological task carried out here, with the assistance of etymology, locates these sources in an emphasis on the visual mode of perception, the elevation of mathematics, the curious historical commingling of Greek thought and Jewish messianism that became Christianity, the diminution of spirit as a category for interpreting the world, and the reduction of rationality to logic. The phenomenon of ambivalence itself is one Poteat acknowledges as one he might be inclined to oppose, too, and to prevent himself from succumbing to opposing ambivalence, he goes so far as to coin words, like "mindbody" and "mindbodily" which he finds necessary to his very ability to carry out his project. These coinages help Poteat confront his own Cartesianism--"...it has provided me...the means for sustaining my grip..." (p. 7)--and afford him the opportunity to consider sidestepping the private, scary questions of the philosopher (Will my body betray me? Will I think in such a way that I deny my body? Will I do something I don't want to do? Is it possible to think and act without madness? Is it possible to think and act with hope?) Indeed, one could say that a profound, entwined and frightening question animates this entire text: Is it possible to be a thinker and embodied and Christian? Such a question, lurking about in the background, promotes reflection that is almost solely concerned with first principles, even as it uses etymology and phenomenological cases in a discursive way to work out those principles.

The mathematician Henri Poincare thought that every human being took her or his own body as an instrument to construct a space of instinctive geometry that her or his imagination could then amplify into a greater space where a universe could be lodged. This is what Poteat has done in this book and this performance of instinctive geometric imagination especially comes through in the many examples or phenomenological cases or analyses of mindbodily being he undertakes

here.

The phenomenological cases are extensive throughout and at times remind the reader of the descriptive linguistic analysis of J.L. Austin. There are descriptions of running, of naming, of answering the question "Where are you?", of hitting a tennis ball, of listening to music played on the piano, of observing oneself in the act of writing, of identifying how and where one thinks in a place while writing, and so forth. These cases are not merely excursive, but play a central role in the movement of the text. It is worth noting that these cases are of one type, roughly, Poteat describing Poteat doing x. That is, the phenomenological cases are descriptions of individual actions. It would be interesting to have Poteat take up the description of social cases, of feats performed by more than one person. This would be especially valuable because of the radical value he affords speech. Because language is our instrument of both individuation and socialization, because it forms both our individual worlds, the world in which we gather with other individuals, and the world we make these sorts of social phenomenological descriptions would be useful to read and would reflect the radical importance and nature of language itself as well as the social constitution of knowledge in language.

Poteat's understanding of speech as action is central to his attempt to describe the features of human being and knowing in a post-critical manner, and this understanding forms the ground upon which his text traverses to and fro:

The radical truth about our being in the world is, then, simple, though it is not simply said; since it can be said at all only by means of a feat of estrangement from that simplicity. Only speech as action, our preeminent human power, which in second-order accounts of our doings and knowings can alienate us from ourselves and from itself, is as action, powerful enough to disentrail us from these self-estranging pictures (p. 22).

Speech in action, then, is understood here as the fundamental activity, or, as a first-order distinction. By contrast, philosophy (and theology) can be understood as second-order activities. Yet, the paradoxical nature of reflection and of language are such that our speaking itself, whether in action or in reflection (however we may decide to distinguish these two activities), turns in on itself, is reflexive, and recoils upon itself. Even as we speak, even in speaking as action (whatever we have determined that to be), our speaking is never finished and thereby always suggests both the inadequacy and the fecundity of speech. Language-mongering may be inadequate but it is never conclusively so. It is never conclusive at all, and this is its power. Further, we speak, realizing the inadequacy of our speaking along with the adequacy and this ambiguity of the speech-act propels us to new ones, just as it propels us occasionally to silence and occasionally to speak again, perhaps anew, but always again, until our fundamental human power to speak is halted. This reflexivity, this recoiling of language itself, Poteat wants to represent in his text,

not capture. One good case of this in the text is the *Divertissement* which appears on pages forty-five through forty-eight. This excursus, given a more frontal status in the text than many of its brother and sister excursive, describes the relation of this reflexivity to the puzzlement which prompts reflection. Poteat intuits that the relation of the two, *contra* Descartes, is no accident. Indeed, in another passage (p. 313, fn. 6), Poteat details the function of "necessity" and of "logical necessity" within this very context of the reflexivity of our speaking.

It would be possible to read this text and conclude that Poteat's religion is language. Thinking such a thing would be especially fruitful when one considers this text in relation to one of its precedent texts, *The Future of an Illusion*, since there Freud constructed a "new" religion of "Our God, Logos", as well as in its relation to Wittgenstein's *Philosophical Investigations*. Yet, Poteat will not permit us such simple identifications and relegations to a place in the tradition:

"I have here capitalized 'Reality' for the first time and this in order to preserve for the reader a sense of the logical heterogeneity of its uses when it refers to the everyday reality between men and when it refers to the very *arche* of all realities, itself not a reality, being the background of all reflection, the unique Being the nonexistence of which is inconceivable: namely, our tonic mindbodies." (p. 312, fn. 1).

At this juncture, the reader may want to assert that embodiment itself functions as the ground for religion in this text. Such a view, while incorrect in its totalization, nevertheless recalls Pascal's *Pensees*, another text which functions as a progenitor for this one. One of the most significant features of Pascal's argument was the role he allotted the body. The body, and its habits, has a vital part in Pascal's thoughts insofar as it is the ground of automatic, unthinking habit. Like Confucius, Pascal understood the way of ritual. Embodiment is the vehicle for ritual, the locus for knowing more than we can tell. The primacy of what Poteat calls tonic mindbodies grounds and creates our speaking and our acting.

The significance of mind-body dualism then, and the importance of Descartes as primal father and foe, become apparent. The recovery of Greek thought, and the overcoming of "Orphic dismemberment" become descriptive pathways for thinking out this significance. One cannot read these sections without remembering Nietzsche and his struggle with the Apollinian and Dionysian strands of genius. Just as Nietzsche understood the inherent ambiguity in distinguishing such strands, Poteat describes, over and over, the ambiguity of the relations of embodiment and reflection. The realization of this ambiguity is what I believe necessitates many of the word coinages to which David Rutledge refers in his review.

Other readers may find this argument less ambiguous. They might

contend that the very phrase "post-critical logic" is yet profoundly Cartesian. They might say that Poteat has replaced one representational view of reality with another one, perhaps a more sophisticated one, but a representational view nonetheless. This criticism would issue a judgment that choosing one representational view over another would be a matter of reference and that a picture, a new picture to be sure, but still a picture, yet holds Poteat captive. Such a reading would require an emphasis on the assertoric and a corresponding deemphasis on the ambiguous tenor of this text.

Whatever understanding of Being the reader decides is operative for Poteat in this text (and I think there are several), the most significant fact about this is not Poteat's definition of Being. Rather, it is that it is impossible for the reader not to catch herself or himself thinking about Being and about the reader's understanding of Being. In the process of asking the perennial question, "Is this text true?", the reader turns up other questions, and the reader begins thinking, or resumes thinking, about something that didn't seem to need thinking about earlier. This catching of the reader thinking is the sign of the performance that is this book.

Richard Gelwick has pointed out that the distinctive character of William H. Poteat's Polanyian Meditations is that it itself is a performance, a text which is an embodiment of its central argument. This salutary comment about the performance that is this text should be born in mind.

Poteat's seminars, undergraduate and graduate, have been performances. There, students, receiving good fortune we most certainly did not deserve or earn, saw his mind at work. The vivification of the life of the mind, the importance of reason and of its claims and inadequacies, the significance of the unity of thought in a tradition of more than three thousand years of thinking, and the invitation to participate in that tradition, to join it—all these gifts Poteat gave us in seminar after seminar through his performance. Now, in this text, we have this performance anew, retained on paper, everready to challenge us to catch ourselves thinking and to attempt to understand the author's performance. In so doing, we come to understand anew Polanyi's performance as well. That understanding accompanies the realization and questioning of one's own understandings and facile acceptances of intellectual paradigms and regnant cultural pieties. The reader's attempt to understand this text will not go unrewarded and the reader will not leave the text unaffected by it. In this way, Polanyian Meditations is a virtuoso performance. Even if the reader comes to differences with interpreting the performance, the performance sustains itself because it is itself endlessly creative when engaged by the reader.

SCOTT REPLIES TO BARKER LETTER

Dear Editor

I would like if I may to reply to Verlyn Barker's interesting criticism of my piece on Personal Knowledge and Sex Education. I would agree that my article was open to criticism; it was not fully enough worked out or integrated. But I find some of these criticisms hard to understand.

1. Tradition. Of course I was not saying that tradition totally determines us. And I thought my first paragraph would make clear that I was speaking of tradition as Polanyi has defined it; certainly not static, for the tradition and authority of a community dedicated to certain ideals makes genuine progress and originality possible. (see for instance Polanyi's 'Science, Faith and Society') The same applies to Verlyn Barker's criticism of what I said about apprenticeship. Of course the good teacher does not teach the pupil simply to mimic or ape. But an apprentice, or a child learning to speak, needs to begin by mimicking the teacher, to get the feel of what the teacher is doing. He will do this because he trusts that what the teacher is doing is meaningful. The teacher may well correct him at this stage if he does not mimic correctly, because until he understands, through doing it, what the teacher is doing, he cannot make it his own and develop it. The scientific community, Polanyi says, teaches conformity for the very purpose of encouraging nonconformity, and the same is true of other communities in varying degrees.

2. Barker thinks I should not speak of "good mothering" without defining what "good" means. On the contrary, it is impossible fully to specify what makes a good mother, for there are many ways of being a good mother. But good mothering can be recognised, just as we recognise a good carpenter or teacher or cook. No two good cooks will cook identically, but one can spot a good cook without any trouble.

3. Verlyn Barker questions what tradition can mean in a pluralistic culture and asks 'what is our tradition with regard to homosexuality? to abortion?'...etc. This is to take tradition at a much more cerebral level than I intended. The tradition I am thinking of is not something a parent could teach to a child, it is absorbed by the child from birth onwards, transmitted by the language, touch, expression, and voice inflections of the parents. One of the "sex education" booklets I have seen is entitled "Taught, not Caught" - stressing the fact that the writer disapproves of attitudes that the child simply "catches" or absorbs from his environment. The approved attitudes in his view are to be taught in a properly constructed, explicit programme. But I am arguing that the understanding that is caught goes much deeper, does not need to be so explicit, but grows like a seed and has the power and discrimination later to assimilate or to reject other views. If, that is to say, the nurturing environment has been good. In such a family environment a child learns by every nuance of speech and attitude of his parents to each other and to him, which he absorbs in an atmosphere of trust and love. So the essential for sex education is really to provide a supporting climate in which parents can rise to this challenge.

I quoted Gerald Heard in my article; I should like here to quote a few more sentences which were omitted before. Heard is speaking of the education parents give, which "is taken in... at a depth well below and more powerful than any rational perception or deduction.... Such educators (the parpents) cannot be so raised and so kept in the right teaching state unless the community can give them the backing they need for their faith. They are the medium between the child and the community.... what the parents

have to supply to the child is not information or instruction but a climate of dynamic security"

In the last paragraph I think Verlyn Barker accuses me of leaving out the central part of human sexuality; the "sensuousness of touch and feeling." Yes, I did leave that out, because I was not writing about sex but about sex education, and I believe that to attempt to teach sex is disastrous. This is illustrated by the story of a husband and wife who bought a book that was to help them to have better sex. The wife complained that her husband followed it so well, she could tell exactly when he got to the bottom of page two and started on page three. It was explicit, not tacit knowledge, and utterly destructive. I do believe that a child who grows up in a loving, caring and relaxed family, with the mixture of freedom and guidance which makes a good education, is likely to find his or her own way in human sexuality when the time comes, unless the community's tradition and beliefs have broken down to such an extent as to make this very difficult. In that case heaven help him or her, for instruction will not.

Dru Scott. 17 2 1987.

From Convivium

BOOK REVIEWS

Arthur Peacocke, God and the New Biology, J.M. Dent & Son Ltd., 1986. £10.95, pp. 198, Index. (Note: Having read this book in manuscript, I have not been able to give page numbers for the few quotations. The book will probably be out by the time readers receive their copy of Convivium.)

Arthur Peacocke is both a scientist and a theologian, and is well equipped to undertake the kind of bridge-building exercise represented by this book. Its aim is to help us ask and answer some basic theological questions in the context of modern scientific culture. No philosophical or theological reflections, he writes, on "the classical trilogy of nature, man and God" can be unaffected by the developments in the biological sciences which have taken place since Darwin, due largely to the fruitful interaction of biologists with physicists and chemists. Developments arising from the discovery of DNA are central to modern molecular biology, which represents the marriage of two strands of thought, the one concerned with the transfer of genetic information and the other concerned with the three-dimensional structures of biological molecules.

In Chapter 1, Peacocke discusses different kinds of reductionism and distinguishes in particular between the forms of ontological and epistemological reduction, which refer respectively to systems and processes or to concepts and theories. He points out that philosophical discussion is often associated with the theme of the relation between wholes and parts, since the laws that explain the behaviour of the whole is not the same as those explaining the behaviour of the parts acting separately. He refers to Ernest Nagel, who, in 1952, carefully analysed the meaning and usage of the terms 'whole', 'parts', 'sum', and 'organic unity', and whose conclu-

sions show, says Peacocke, that the question of whether "the analysis of 'organic unities'...necessarily involves the adoption of irreducible laws for these systems and whether their organisation is of such a kind as to preclude a simple summation of their parts to yield a whole" is not one which can be settled in a wholesale or a priori fashion. Each system needs to be examined on its own merits, "even each biological system and level of inquiry."

I was challenged by this statement, which differs in fundamental respects from what I understand to be Michael Polanyi's position, and I intend to discuss this question later, having first reviewed the book as a whole. In Chapter 2, Peacocke considers the relation of biology to physics and chemistry in the light of his earlier analysis of reductionism. Chapter 1 showed that methodological reduction is permissible for research, but needs balancing by holistic or 'compositionist' methodologies. Biological phenomena are emergent phenomena characterised by increasing complexity of organisation, constituting a succession of forms, a hierarchy of parts making wholes at different levels. At each new level of biological organisation, we need special concepts to describe and understand the new complex relations which emerge. This, thinks Peacocke, is strong evidence for the autonomy of biological concepts and for the impossibility of translating the distinctive conceptual terms of biology into those of physics. The interface between biology and physics-and-chemistry is a central concern of the new biology and there are various theories in circulation, but, as Peacocke points out, there is still profound confusion over the question, which seems always to centre round the nature, character and existence of distinctive relations between the parts and their respective wholes.

Peacocke refers with qualified approval to Polanyi's account of 'boundary conditions', but seems to think Polanyi's argument is vulnerable because he first works it out with reference to machines "and he then transfers the same argument to the relation of biology to physics and chemistry." Peacocke's footnote for this statement gives five general references to Polanyi's writings, including Personal Knowledge, The Tacit Dimension, and The Study of Man, but without any specific page references. He does, however, refer to Polanyi's article, Life's Irreducible Structure, originally published in Science, (1968) and reprinted in Knowing and Being (R.K.P. 1969), where Polanyi shows that living organisms work, as machines do, under the control of at least two distinct principles. In the case of the machine, the higher principle is that of the machine's design, which harnesses the principles governing the physical and chemical processes on which the machine relies in the service of the machine's own purposes. The organism is also a system which works according to at least two different principles, its structure serving as a boundary condition harnessing the physical and chemical processes by which its organs perform their functions. Polanyi argues that any two-level system operates under dual con-

trol, whether we are speaking of human artefacts or of biological systems. Peacocke finds the argument vulnerable because, in his view, "the concepts of mechanical engineering are reducible to physics and chemistry, at least in principle; for, given the parts with their physico-chemical properties and the relationships between these parts (his italics), the operation of the machine can be deduced. It would then seem plausible to argue that mechanical engineering is indeed reducible to physics and chemistry." (Compare this with Polanyi's comment, "A complete specification of a machine in physico-chemical and engineering news".) I am genuinely baffled by Peacocke's logic at this point, but I am still leaving discussion till later. I note, however, that Peacocke agrees with Polanyi that "the differentiating characteristic of the concepts of mechanical engineering is that they are concerned with the relations between parts and are, to that extent, distinct from those of physics and chemistry." Yet this is clearly not enough, in Peacocke's view to establish what he calls epistemological autonomy, let alone process autonomy.

Peacocke sees more force in Polanyi's argument when it is applied to a biological system such as DNA, which carries biological information. "The concept of 'information transfer' which is needed to understand what is going on biologically when DNA functions in an actual cell, cannot be articulated in terms of the concepts of physics and chemistry." This leads Peacocke to the cautious admission that "there does seem to be a prima facie case for arguing that some biological concepts, and so theories, are autonomous and not reducible in the strict sense." Again, Peacocke is clear that, to be governed by the dictates of naive reductionism is to allow oneself to be robbed of the conceptual resources for describing the complexity of reality. Why, he asks, should molecules and atoms alone be 'real'? There are enduring entities on every level. "There is", he says, "no sense in which subatomic particles are to be graded as 'more real' than, say, a bacterial cell or a human person, or even social facts. Each level has to be regarded as a cut through the totality of reality...in the sense that we have to take account of its mode of operation at that level." Such a statement seems to me to show that Peacocke fully appreciates the irreducible reality of things and situations on every level of reality. Why, then, does it not provide him with strong evidence for the autonomy of biological systems and for the impossibility of reducing them as well as the concepts we hold about them to their physical and chemical components? I am beginning to suspect that the answer to this question will reveal a disagreement, not about the nature of reality, but about the relation between epistemology and ontology.

In the next two chapters, Peacocke picks out a few leading features of the 'new biology', dealing in Chapter 3 with biological investigations that rely on a 'holistic' methodology and in Chapter 4, with investigations that aim to reduce the concepts and theories of high level sciences (biology,

sociology and the study of behaviour) to lower level description. In Chapter 3, he talks about new ways of thinking about biological evolution, made possible because matter is now understood to be self-organising and capable, through its own inherent properties, of producing new living forms. Evolution is open-ended, unpredictable, creative, and increasingly so, as one goes up the scale of evolution, focussed more and more in the activity of the biological individual, till, in man's creativity and sense of freedom to take responsibility for his decisions, it reaches its apogee, and also manifests most clearly that this process involves interdependence as well as struggle, pain and suffering. The death of the old is the prerequisite of new life; but the survival of the new involves an intricate exchange of energy and matter - hence, the importance of ecology and of a holistic outlook. To survive, man must become a wise and committed steward of the earth, using his technical powers to protect the biosphere in all its interconnectedness.

In Chapter 4, Peacocke speaks first of the work of Prigogine and the Brussels school, which has thrown light on the emergence of self-producing living systems, which can maintain themselves in an ordered, steady state. Work in molecular biology and biochemistry has shown that the interplay of chance and law is creative in a way that makes the emergence of living structures inevitable, including the possibility of biological and human life. In the second part of Chapter 4, he discusses sociobiology, which studies the biological basis of all social behaviour and aims to 'biologise' the various social sciences, that is, to reformulate them and integrate them in what is called 'the modern synthesis'.

The second part of the book is an attempt to assess the implications of these new biological perspectives for our understanding of man, nature and God, "since our explicit concepts of God must be sensitive to the best knowledge of the world available to us." In Chapter 5, Peacocke gives a brief survey of nineteenth and twentieth century theological reaction to the impact of Darwin and the Darwinians, concentrating on the more positive responses of European theologians like Bergson, Pannenberg, Moltmann, Rahner, Tennant and Raven, drawing attention also to the influence of Whitehead and his idea of 'becoming' on thinkers like William Temple and L.S. Thornton, as well as on those who call themselves 'process theologians'.

In Chapters 6 and 7, Peacocke attempts his own unified perspective on the classical trio of nature, God and man, offering us a theologically informed view of nature as creation and of man's role as co-creator, and pointing out that a right relation between man and nature involves cost and sacrifice of selfish ends and commitment to a holistic view of nature. The 'simple' matter of the 'big bang', he writes, had implicit in it every level of development that has taken place since - but has only gradually unfolded. "We do not know all there is to be known about oxygen, carbon, nitrogen, hydrogen and phosphorus until they adopt the form of the DNA

molecule in its biological milieu." Indeed, we do not know all that is to be known about matter until it adopts the form of persons. Man is one of the new features and properties of matter, whose self-consciousness is one of the most real and significant features of the cosmos, showing the potentiality of living matter in a new light. Peacocke describes his own theological position as pan-entheistic, defined as the belief that the being of God penetrates the whole universe but is not exhausted by it. God is immanent in the creative interplay of chance and law that has given rise to the increase in complexity in the universe, but also transcends it. Christian materialism sees the physical and the personal as facets of one reality, making nature an expression of God's being and sacramental of personality. A sacrament is a focused instance of what is happening all the time. We live in a world of continuous creation, an open-ended process of emergence of new forms. Man alone has the power to refuse his calling to be a co-worker with God in loving and intelligent stewardship and to introduce instead discord and imbalance.

In Chapter 8 Peacocke poses some questions to advocates of 'evolutionary naturalism', who see nature as 'all there is', dynamic and evolving, but explicable entirely in the causal language of genetics, with behaviour viewed merely as a strategy for gene survival. Peacocke is clear that we need a language other than that of genetics to express the possibilities for self-fulfilment and creativity which have been opened up by the freedom God has allowed to evolve. His sacramental view of the cosmos brings the scientific and theological perspective into a single focus. In Chapter 9, he discusses the sacramental and instrumental functions of matter and suggests that there are two ultimate sacraments - the created order as a whole and the incarnation, which Christians believe uniquely expresses God and his purpose as well as being uniquely operative of that purpose. In Christ, the sacramental character of the world was made explicit and perfected.

In a short concluding chapter, Peacocke draws the threads together. He reminds us that it is the natural processes of the world that have led to the emergence within it of human beings, whose sense of transcendence over their environment led to the quest for "One who makes intelligible the fact that there is anything at all". Peacocke also points out that it is the transcendence-in-immanence of man's experience that raises the hope that in man "immanence might be able to display in a uniquely emergent mode a transcendent dimension to a degree which could unveil, without distortion, the transcendent Creator". This is precisely what the incarnation means to Christian faith - the unveiling to us in personal form of a Creator who shares in the creative process in which suffering and death are the unavoidable gateway to new life and new creation. Just as transcendence and immanence belong together in personal being, so do emergence and continuity in the process of evolution, and Peacocke rightly warns of the danger of treating our relation to nature as merely that of a stage on which to

strut. We overlook our continuity with the organic world at our peril, but equally, we must not forget that "the final agony and apogee of the evolutionary process is the paradox of a man on a cross exalted by God into the divine life." With these words the book ends, leaving one with the feeling that one has participated in a highly satisfying exercise in interdisciplinary study. There is also a useful appendix on Thermodynamics and Life, which will be welcome to those who, like myself, have problems in understanding how a universe that is 'running down' can also continuously 'wind itself up'. In other words, the appendix is about entropy and its mysterious relation to the process which gives rise to a continual increase in complexity and order.

I want now to return to the earlier question raised by Peacocke's suggestion that we need to distinguish between the hierarchy of theories, concepts and descriptions employed by different sciences and the hierarchy of organised systems and real relations between events to which the theories and concepts refer. Is it, in fact, necessary to distinguish between epistemological and ontological reduction, between what Peacocke also calls 'the autonomy of theory' and 'the autonomy of systems and processes'? The idea is that it may be possible to view higher level concepts and theories as non-reducible to terms of lower level parts and the laws which govern them. As Peacocke says, the extent to which reduction is possible involves the question of whether methodological reduction is merely a technique for studying real entities, or whether it involves a metaphysical claim. Methodological reduction is itself merely a strategy for studying problems by breaking down wholes into their component parts. This analytic procedure is a prerequisite of research and involves no philosophical claims, whereas hard reductionism is the view that wholes reduced to parts are 'nothing but' the component bits. Each science is a relatively autonomous interlocking network of theories, concepts, experimental techniques and fields of observation, yet most scientists have an implicitly reductionist outlook. The central dogma of molecular biology is the transmission of genetic information through molecular structures and its ultimate aim is to explain all biology in terms of physics and chemistry. Sociobiology is also reductive in import and hopes eventually to 'biologize' the various social sciences. Peacocke exposes the circularity of hard reductionism by showing what happens when the argument is pushed to its logical conclusion: not only is all biology reducible to physics and chemistry, but this is merely the application of mathematical truth, which is merely the result of rules of thought, which are merely the product of social, cultural and linguistic influences, which are merely the expression of psychological mechanisms, "which are merely physiological processes"!

Peacocke points out that the issue of whether methodological reduction is merely a technique or whether it involves the genuine ontological reduction of real entities hinges principally on the question "whether the theo-

ries and experimental laws formulated in one field of science can be shown to be special cases of theories and laws formulated in some other branch of science." If such is the case, we can say that the former branch of science has been reduced to the latter. The hard reductionist believes there is no stopping place short of the so-called 'fundamental particles' which are supposed to be the indivisible units of matter - the 'billiard balls' that underlie the mechanical model of the universe. But, according to the new physics, there may be no such 'thing' as an elemental particle, since even the smallest identifiable element of matter seems to be a pattern of energy, to be regarded in theory as a 'composite whole', even if, in practice, it is too infinitesimally small to be analysed.

As has already been said, Peacocke accepts that many of the concepts we use are non-reducible, since, as new forms of matter emerge, new terms need devising, descriptive of new relations and processes. For example, in evolutionary theory, we speak of mutation, sexual recombination, natural selection, and so on - terms which belong to the logic of biology, which cannot be translated into terms of physics. What I find puzzling is the argument that we can accept epistemological autonomy - the autonomy of biological concepts - but not the autonomy of the new forms of matter which make the new concepts necessary. I am also puzzled by the suggestion that we can accept epistemological autonomy in particular cases, but that each case has to be settled on its own merits, not as a matter of general principle, based on the logic of the part-whole relation.

The layman is always at a disadvantage in discussing scientific matters, especially if the question at issue has to be decided empirically. However, if, as I believe, there are logical grounds for the difference of viewpoint, I must venture to pursue the matter with 'universal intent', hoping at least to provoke further discussion and to clarify my own thinking, and not to contribute to the confusion that marks the current debate amongst scientists and philosophers. As I have already indicated, I suspect that the problem arises because we start from different presuppositions about the nature of the relation between epistemology and ontology. Anyone familiar with Polanyi's analysis of the structure of knowing will be aware that the act of knowing consists in integrating clues of which we are subsidiarily aware to form a meaningful coherence at the focal level of awareness. We attend from the subsidiary level of awareness to the focal level, and in doing so, we integrate the subsidiary particulars or parts to form a pattern or whole. The parts and the whole belong to different logical levels. In the context of epistemology, the difference of logical level is demonstrated by the fact that we cannot be aware focally of the clues from which we attend and of the whole to which we attend simultaneously. It is logically impossible to achieve focal awareness of different levels at the same time. In the context of ontology, it is equally true that parts exist on a different logical level from the wholes which they jointly form. Every

composite entity exists on at least two logical levels. The difference of level means in this case that the principles and relations which govern the behaviour and define the meaning of the parts (as such) are different from those which govern the behaviour and define the meaning of the whole. Their 'logic' is different. Both kinds of relation and both sets of 'laws' operate in the same physical space. They are not levels in the sense of being separable layers - top, middle, bottom and so on. If this were so, they could be set side by side and viewed simultaneously as one might do with the layers of an archaeological dig or a sandwich. In a logical sense, the layers of a sandwich all exist on the same level. Because we are talking about different logical levels, the whole cannot be reduced to terms of its parts without destroying it. Reduction is irreversible in the case of physical dissection, though it is a reversible process for observational or theoretical analysis, and depends simply on a switch of attention from the whole to the part or vice versa.

Logical levels are levels of meaning. Polanyi always uses the term 'level' in the sense that it represents a level of organisation or meaning, and it is part of his holistic metaphysic that meaning cannot be separated from its object, any more than knowing can be separated from being. According to Polanyi's thesis, knowing is a form of being, and this was the great discovery he made in the course of his analysis of the structure of knowing: namely, that we indwell what we know subsidiarily in the way we dwell in our body - so that body and mind can be viewed as a two-level unity: so that all knowledge can be said to be bodily knowledge; and so that persons can be understood as embodiments of what they 'know' (in the broadest possible sense). On a Polanyian view, epistemology and ontology belong together in a unity that is like that of form and content. All facts are meaningful facts. They are only recognisable as facts because of our powers of aesthetic recognition, which enable us to discern pattern and coherence. Meaning can never be separated from its object precisely because there is no such thing as a 'bare' fact. Facts are inherently meaningful because they have 'shape' or significant pattern of some kind. William Temple once expressed this quite simply by saying, "The actual significance of an object is more properly called its reality or substance than is its purely physical nature." (Daily Readings, 1948, p. 186, Hodder.) Our intimations of reality have to do with our discernment of some kind of significant pattern. We recognise an entity in virtue of the order which gives it coherence and meaning. We both achieve this integration of clues to form a pattern and discover the order and pattern that is objectively there, waiting to reveal itself. This gives to knowing its polar structure. The knower, as subject, stands in a relation of polar complementarity to the object of his knowing.

When we recognise an entity as real, we form a concept that reflects the meaning we have discerned. It is part of Polanyi's basic thesis that

the structure of our comprehension reflects the structure of the entity comprehended. This is what validates the claim that knowledge of the real world can be genuine knowledge. This, in my view, is the great merit of Polanyi's theory of personal knowledge. He bridges the gap between knower and known by his discovery, (made in the course of analysing the structure of knowing) that the structure of knowing actually reflects the structure of being and is itself part of being. This goes together with the realisation that genuine knowledge is 'understanding' and that the quest for knowledge is a quest for 'meaning', which can be satisfied because the real world is inherently meaningful. It also goes together with the recognition that knowing and being share the same two-level, part-whole structure, on which the dialectical interaction depends, which takes place in all acts of true participatory knowledge. Knowing is both achievement and discovery, and takes place within a framework of commitment. This means that the knower's very being is involved in his knowing, or as Polanyi sometimes says, knowing has a subjective as well as an objective pole - an element of personal legislation as well as an objective reference.

There seems to be little disagreement between Polanyi and Peacocke about the fact of the non-reducibility of concepts, but Polanyi's reasons for arguing for what Peacocke calls 'epistemological autonomy' are different from Peacocke's. In Polanyi's view, epistemological and ontological reduction stand or fall together, and the non-reducibility of concepts derives from the non-reducibility of the entities or systems referred to. Any biological entity can be analysed into its parts as a matter of methodological reduction; but concepts reflect the meaning inherent in the entities to which they refer, and a meaningful entity is no more reducible than a meaningful concept. On Peacocke's view, one may have epistemological autonomy without ontological autonomy. If Polanyi's metaphysical assumptions are correct, this is not possible. It would only be possible by allowing facts to be separated from meanings and treated as mathematically measurable 'bare' facts. According to Polanyi's metaphysics of levels, every real entity is a unique meaning or meaningful coherence while, at the same time, being a collection of parts on a different logical level. Each level of being has its own distinctive unity or principle of rationality which is its meaning. One can trace this principle from atoms to galaxies. On one level, the unit of reality or coherence is the atom; on another it is the molecule, on another the cell, and so on, up the scale of levels from organs to organisms, to populations of creatures, to ecosystems. Each higher level includes all the preceding levels in a hierarchy of growing complexity. Each whole is a meaningful system with its own distinctive internal relations and principles of organisation, irreducible to the relations and 'laws' of lower level wholes, which remain recognisable for their own distinctive relations and ways of being.

Because a whole exists on a different logical level from its parts,

its functioning in no way interferes with that of the lower level entities which constitute its parts. A molecule has its own distinctive internal relations and way of being, which does not interfere with that of the atoms which compose it. The molecule relies on the atoms for its existence, but harnesses them in the service of its own distinctive 'higher' level functions. Their relation is one of complementarity, not of contradiction, but they do not exist on the same logical level. When analysed, the molecule is a collection of atoms, but the atoms, viewed as such, do not constitute the reality of the molecule. The two are not synonymous, because the molecule has an order and a pattern, a 'Gestalt' which constitutes a meaning that is 'more than the sum of its parts'. Additive logic does not work for entities whose meaning is inherent, because every change of logical level involves new emergent properties and new organisational principles which are definitive of their meaning.

Different logical levels can occupy the same physical space, but we are able to focus attention on which level we choose, as when the artist switches attention from his painting to the individual brush strokes. Brush strokes and picture relate as parts to a whole and the former derive their meaning from the latter. Similarly the scientist can switch attention from a molecule to the atoms which compose it. In doing so, he is switching attention from one logical level to another. In every act of perception, the clues which lie in our subsidiary field of awareness derive their meaning from the pattern or coherence which is formed by our ability to integrate parts to wholes at the focal level of awareness. What we observe depends on our intention. The principle is the same when the nuclear physicist sees either a particle or a wave movement in an experimental situation. Which he sees depends on his intention, on his experimental technique and on the questions he is asking at the time.

In this paper, I have been 'thinking aloud' - trying to identify the nature of the disagreement between Peacocke and Polanyi, and daring to do so only because of my belief that the difference has little if anything to do with the study of particular cases and everything to do with basic presuppositions about the nature and structure of reality. Quite often in the course of his book, Peacocke makes statements which appear to support 'systems autonomy', (the non-reducibility of higher level systems and processes to terms of lower level laws and relations), but he remains insistent that this is not a matter on which judgement can be made wholesale or a priori. This increases my conviction that he must be working with presuppositions that differ in certain respects from those which I share with Polanyi.

It seems clear to me that the confusion has to do with the nature of logical levels and whether the relations and principles which govern the structure and behaviour of any given level also define the nature of each particular reality and give it a rationality and a meaning which inhere in its very structure. If we believe that meaning is inherent in its object,

we must - it seems to me - agree with Polanyi that epistemology and ontology belong together, that knowing is a form of being and that the cognitive or theoretical aspect of our knowing reflects the structures and meaning of what we know. The issue seems to hinge on whether one can say that the richly complex and manifold forms of nature are recognised in virtue of their inherent rationality or whether order and meaning is something we arbitrarily impose on the sense data. Only if the latter is the case can we separate objects from their meaning and allow methodological reduction to develop into ontological or metaphysical reduction.

For Polanyi, the unity of fact and meaning is integral to his metaphysics. He repeatedly demonstrates that, when we analyse a whole into its parts, or view the particulars focally, the meaning of the whole is lost. This can be demonstrated in a wide variety of experimental situations, but is also part of our everyday experience. Every whole as such has a meaning that is more than that of a collection of its parts. An organism as such is not reducible to terms of its organs, and so on. If one wishes to analyse any particular whole into its component parts, the original whole is destroyed, though not irreversibly in the case of mere perception. Methodological analysis is, of course, a prerequisite of research, but the point is that, for as long as the parts receive focal attention the whole and its internal relations and processes is lost sight of. Nor can the laws and relations of the whole be deduced from a knowledge of the laws and relations operating in the parts.

For Polanyi, concepts correspond to the realities to which they refer. We invent concepts to help us understand the real world and its inherent rationality and communicate our experience. Concepts are symbols of our comprehension; they are the correlate of what we comprehend. As Polanyi says, the structure of our comprehension reflects the structure of comprehensive entities. Higher level concepts are irreducible precisely because they refer to autonomous realities whose meaning is part of their being. We recognise these meaningful coherences in virtue of our aesthetic power to integrate parts to wholes. As has been said already, knowing is for Polanyi both achievement and discovery, a dynamic and dialectical interaction between subject and object. Polanyi's presuppositions being what they are, he is able to say that one can make an a priori judgement about the irreducibility of concepts and of entities to which they refer. Such a judgement has to do with the logical relations that obtain between parts and wholes. In his system of thought there is no possibility that our concepts about a biological system may be autonomous, while the system itself may be viewed (though not adequately described) in terms of the laws governing its component parts on a different logical level. The idea of conceptual autonomy combined with ontological reduction makes no sense, because concepts derive their meaning from our knowledge of the relations and laws which govern 'wholes' on their own logical level. Reduce a whole to terms of its parts,

that is, to terms of its lower level relations, and you have a different set of concepts, relating to different realities. If you reduce a molecule to a collection of atoms, you no longer have a molecule. When any whole is reduced to its parts, that collection of parts cannot, logically cannot, mean what the same collection of parts meant when they were organised to form a more inclusive whole. When they function as parts, components derive their meaning from the whole. Conversely, when the whole is dismantled, its own distinctive relations and operational principles cease to control the parts, because its own higher level 'logic' ceases to exist and its own distinctive concepts become 'homeless'. This is what happens when methodological reduction develops into ontological reduction. This is why positivists like Ernst Mach and his followers could regard all theoretical constructs and concepts as merely convenient summaries of experience and could argue that the structure of our thought can claim no relation to reality.

Polanyi's theory of personal knowledge assumes a genuine relation between epistemology and ontology, a relation that allows our theories and concepts to be 'true' or 'false', and not just convenient summaries of the data of experience. It allows our concepts to correspond to different kinds of reality and to reflect the inherent meaning of real entities and systems on different levels of being.

To sum up, it seems to me that the disagreement between Polanyi and Peacocke is initially of a logical character, but raises at a deeper level, an ontological issue, because it concerns the question of whether the concepts and theories we form about them genuinely reflect the nature of this inherent rationality or meaning. Polanyi is only able to maintain his thesis in the context of his theory of personal knowledge. The very structure of knowing is anti-reductionist, because we cannot know anything without integrating the subsidiary clues to form a meaningful coherence. It is in virtue of the structure of tacit knowing that he can demonstrate that the part-whole structure of real entities corresponds to the two-level structure of knowing. Knowing is an exercise in synthesis, in achieving meaning - the reverse of reduction. We recognise meaningful patterns in nature by our powers of integration. This gives rise to intimations of reality, which depend on the coincidence of pattern achieved and pattern recognised, that is, recognition of the inherent principles and relations which are constitutive of meaning. Polanyi's ontology is therefore also anti-reductionist and includes mind and the emergent properties of consciousness and self-consciousness as modes of being. True knowledge is, for Polanyi, a matter of understanding - that is, of participating in the richness and complexity of reality, which is its meaning - a complexity that, at the level of conscious and self-conscious behaviour, includes purpose and intention and the search for meaning - which suggests that life is in an ultimate sense future-drawn and not merely causally conditioned.

Having said this, I have to add that, on the basis of the kind of

discussion which marks the second part of Peacocke's book, which deals more specifically with theological issues and stresses the sacramental nature of the cosmos. I am persuaded that he would probably want to endorse all that Polanyi says about our powers of participating in and contributing to the rich ontological complexity of our world. I have to conclude that, whatever disagreement Peacocke may have with Polanyi on questions to do with reduction and autonomy, they share a remarkably similar vision of what is ultimately and irreducibly 'really real'.

J.O. Crowsdon.

EDITOR'S NOTE. Professor Peacocke has been kind enough to reply briefly to Joan's review, and permits us to reproduce the following comment: 'You cannot, in my view, talk of the "autonomy of new forms of matter" [e.g. p. 14 above]. Autonomy is about nomoi - laws, and so is about concepts and so is epistemological. I think she is too much in the strait-jacket of Polanyi's classifications to accept my point. Thus I do not think Polanyi's account of perception (clues from, attend to, subsidiary/focal awareness and all that) is about the same area of discourse as what I refer to as the hierarchy of complexity in both the sciences and in natural systems.' The Editor hopes that this soupçon of controversy will encourage our subscribers to read Peacocke's book and perhaps contribute their own impressions. As they might say in the trade, 'This correspondence is now open'.

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