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Preface

This issue includes a paper and two responses from the November 2004 Polanyi society meeting. Some members of the Society have long talked about organizing a session that puts Polanyi and Whitehead together. Joe Bracken provided an interesting attempt to do so and Walter Gulick and Richard Moodey respond to Bracken. There is also a paper putting together Vico and Polanyi by Craig Mattson. This essay was first drafted as a paper for the Loyola Polanyi Conference in 2001. Finally, there is a review essay by Walter Mead on Polanyi and Oakeshott, as well as three shorter reviews.

There are several interesting items in "News and Notes," including a report on Society business and more about the digital archives of old issues of *TAD* and the availability of an electronic copy of new issues. The long-awaited Polanyi biography is scheduled to be published in May. The call for papers for the November 2005 annual meeting notes that there may be some special Polanyi-related programs this fall in connection with the publication of the biography and/or the interest of the American Academy of Religion in featuring thinkers from Eastern Europe.

Phil Mullins

Tradition and Discovery is indexed selectively in *The Philosopher's Index* and *Religion One: Periodicals.* Book reviews are indexed in *Index to Book Reviews in Religion*.

NEWS AND NOTES

Information about the forthcoming Polanyi biography, *Michael Polanyi: Scientist and Philosoph*er by William Tausig Scott and Martin X. Moleski is available on the Polanyi Society web page (http://www.mwsc.edu/orgs/polanyi/). This 368 page work is due to be available from Oxford University Press on May 13, 2005.

The Way Of Discovery: An Introduction To The Thought Of Michael Polanyi by Richard Gelwick (Oxford University Press, 1977) is now available in a new edition from Wipf and Stock publishers, 199 West Eighth Avenue, Suite 3, Eugene, Oregon 97401 or from www.wipfandstock.com or www.amazon.com. Orders made directly from Wipf & Stock get a 20% discount on up to 4 copies and a 40% discount on 5 or more copies. *The Way of Discovery* was an early and important piece of Polanyi scholarship that grew out of earlier work. Richard Gelwick completed the first theological dissertation on Michael Polanyi in 1965 under the direction of Charles McCoy and Durwood Foster at Pacific School of Religion. Gelwick also published the first bibliography of Polanyi's social and philosophical thought with microfilm of Polanyi papers in 1963. He worked with Polanyi 1962-63 during Polanyi's preparation of the Terry Lectures that were published as *The Tacit Dimension* and also later with Polanyi in 1973-74 on the manuscript that became the Polanyi and Prosch book, *Meaning*. From 1978 to 1999, he was General Coordinator of the Polanyi Society and from 1978 to 1991 editor of *The Polanyi Society Newsletter* that became *Tradition and Discovery* in the Fall of 1984.

SPCPS Conference 2005 is set for Friday, April 1st (3 P.M.) to Saturday April 2nd (5 P.M.) at Hugh Stewart Hall, The University of Nottingham. The SPCPS is The Society for Post-Critical and Personalist Studies, the organization that has now officially taken over the publication of *Appraisal.* Papers by the following people are on the docket: Wendy Hamblet, Adelphi University., New York, Bob Brownhill, University of Surrey, and Paul Tyson, Queensland University of Technology. It may be still be possible to submit a proposal for this meeting. For information about presenting a paper or simply attending the conference, contact Richard Allen (rt.allen@ntlworld.com).

Jere Moorman and Will Stillwell have written a paper which takes a contemporary look at the 1966 published dialogue between Carl Rogers and Michael Polanyi. The paper is published in *The Person Centered Journal*, Vol 11, No. 1-2, (2004): 48-58. *PCJ* is the journal of the Association for the Development of the Person-Centered Approach.

Eric S. Howard delivered a paper titled, "Why Didn't Hayek Finish Reading *Personal Knowledge*? An Investigation Into the Methodological and Philosophical Relationship Between Friedrich Hayek and Michael Polanyi" at the Southern Economic Association Annual Meeting on November 21-23, 2004.

Albert Bagood's essay, "The Complexity of a Passionate Scientific Researcher: The Holistic Approach of St. Thomas and M. Polanyi," appeared in *Angelicum,* vol. 81, no. 3 (2004) : 593-614.

Phil Mullins' essay, " Bible Study, Critical Thinking, and Post-Critical Thought: Cultural Considerations" was recently published in *Critical Thinking and the Bible in the Age of New Media*, ed. Charles M. Ess. (New York; University Press of American, 2004): 269-290.

Joseph A. Bracken's "The Field Metaphor in Ervin Laszlo's Philosophy and in Neo-Whiteheadian Metaphysics" was in *Process Studies*, Vol. 32.2 (Fall-Winter 2004): 303-313.

Minutes of Annual Meeting of Polanyi Society

November 19, 2004 —San Antonio, Texas

A quorum of members was observed. The meeting came to order around 11:45 AM. Walt Gulick chaired the meeting.

1. Minutes of the preceding Annual Meeting of the Society were approved unanimously on a motion by Cannon and Rutledge.

2. On a motion by Apczynski and Gelwick, the Members temporarily suspended the By-Laws. They then unanimously approved the changes to the By-Laws proposed by Gulick on a motion by Apczynski and Rutledge. All of the changes were made to bring the By-Laws into consistency with themselves and with the traditions of the Polanyi Society. All Board members should have received a copy of the By-Laws in e-mail from Gulick.

In the same action, the Members accepted the following classes of officers: (a) Term ending at the Annual Meeting in 2007: Gelwick, Lewis, Moorman; (b) Term ending at the Annual Meeting in 2006: Apczynski, Gulick, Meek, Moleski, Sanders; (c) Term ending at the Annual Meeting in 2005: Mullins, Puddefoot, Rutledge.

3. On behalf of the Board, Moleski solicited the group for three volunteers: (a) a business manager for *TAD*; (b) a coordinator for a Polanyian business seminar; (c) someone will serve as facilitator for the discussion list.

4. Cannon reported on the progress he has made in developing a summer seminar. He asked for more feedback on his questionnaire now posted on the Polanyi Society web site.

5. Gulick reported on a $300 donation made each of the last two years to help bring newcomers to come our Annual Meeting. Other donations would be gratefully accepted for this scholarship/travel fund, which was first described in *TAD* 31:1, p. 4.

7. Jere Moorman's four proposals (submitted by fax due to travel difficulties) were noted: (a) produce an issue of *TAD* within next year devoted to leadership, business and Polanyi; (b) provide a business and Polanyi presence at the summer seminar of 2005 currently being contemplated; (c) develop a bibliography of books, papers and web sites appropriate to business people interested in Polanyi; (d) develop of a group people willing to teach Polanyian ideas to business people.

The meeting adjourned by an act of consensus around 12:30 P.M..

Respectfully,
Martin X. Moleski, S.J.
Secretary

Tradition and Discovery Digital Archives

You can now access new and old issues of *TAD* on-line from the Polanyi Society web page (http://www.mwsc.edu/orgs/polanyi/). If you go to the home page, you will find a link to the digital archives that presently includes pdf versions of the last 25 issues of *TAD*. These are the issues from Fall of 1996 through this issue. You can download a full issue or a particular article from the table of contents. Slowly, additional issues will be added to the collection, although it may not be possible to produce good quality pdf versions of early issues of the journal for which there are no electronic files. Presently, the digital archives are password protected but eventually the Society should be able to allow open access to the archives. Members who wish to use the archives can get the password by e-mailing Phil Mullins (mullins@mwsc.edu).

2005 Polanyi Society Annual Meeting Call for Papers

This year's annual meeting of the Polanyi Society will be held in Philadelphia, Pennsylvania on November 18 and 19, 2005. As in past years, our meeting technically will be an "Additional Meeting" held in conjunction with the annual meetings of the American Academy of Religion and the Society for Biblical Literature. The request to the AAR/SBL for space is pending, but we anticipate again this year being granted both a Friday night session runnning from 9:00-11:00 p.m. and a Saturday morning session running from 9:00-11:30 a.m.

In 2005, the AAR will highlight thinkers and movements from Central and Eastern Europe (much as last year in San Antonio Latin American contributions were featured). This means there are opportunities to submit proposals for papers on issues related to Polanyi in several of the regular program units (such as philosophy of religion) of the AAR.The AAR call for papers will be available online after January 24, 2005 (http://www.aarweb.org/annualmeet/2005/call/default.asp). To submit a proposal to an AAR program unit, one must be a member of the AAR/SBL. Some, but not all, of those who attend the Polanyi Society meeting are AAR/SBL members. Nevertheless, this year offers an opportunity to promote a wider appreciation for Polanyi's contributions at the AAR/SBL. It is acceptable to the planning committee for the Polanyi Society's annual meeting program to have persons submit the same proposal to an AAR section and the Polanyi Society so long as it is made clear that this is being done and the acceptance or rejection of the AAR submission are communicated to the Polanyi Society planning committee as soon as this is known. If there are a number of proposals for papers that are submitted to both the AAR and the Polanyi Society, the final decisions about the Polanyi Society program will be delayed until late in the Spring, after AAR program decisions are finalized.

This year is special because of the publication by Oxford University Press (in May) of the long-awaited biography of Polanyi co-authored by the late William Scott and Martin Moleski. A special panel reflecting on Polanyi's life, with special attention devoted to the biography, is being proposed to the AAR for consideration that would be held at an AAR session scheduled at some point betweeen November 19 and 22.

Paper proposals for the Polanyi Society meetings on Novermber 18 and 19are solicited on *any topic* relevant to our Society's interests. Given the special interest in Central and Eastern Europe this year and the publication of the biography, proposals dealing with the historical development of Polanyi's thought would be especially apropos. Accordingly, this would be an appropriate occasion to focus on Polanyi's scientific work, perhaps exploring how his scientific background influenced his economic, philosophical, or religious thought. One session of the Polanyi Society meeting may be devoted to the biography.

Proposals are ordinarily up to 500 words in length, but full-length papers may also be submitted for consideration. Send them as an e-mail attachment to the address below:

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Wisdom and Eloquence in the Tacit Dimension: Vico and Polanyi on Knowing and Making

Craig E. Mattson

ABSTRACT Key Words: Gambattista Vico and Michael Polanyi, wisdom, eloquence, *verum-factum*, indwelling, constructivism, rhetoric, *New Science*, embodiment, abductive, aurality
This comparative study searches out intersections in the thought of Giambattista Vico and Michael Polanyi by situating their thought in relation to the history of ideas generally and to the rhetorical tradition specifically. The overarching concern of the essay is the relation between knowing and making truth—or, in rhetorical terms, between wisdom and eloquence.

I

Vico has been the victim of a good many bad comparative essays. He "has been hailed and promoted as the discoverer of almost every major field of knowledge in the humanities and in the social sciences" (Mali 1-2). Admittedly, the prevalence of what Mali calls the "Vichian industry" can be explained by the fact that the Italian humanist talked about a lot of things that happen to concern us today. For example, Vichian ideas appear to align with postmodern critique, because, as Giorgio Tagliacozzo observes, Vico attacked Cartesianism, meshed rhetoric and philosophy, and sought interdisciplinarity (Danesi 182-183). Furthermore, as Robert Miner observes, Vico's *verum-factum* insistence that what is true is convertible to what is made appears to align with the postmodern penchant for constructivism.[1] But to argue that Vico saw through a glass darkly what postmoderns now see clearly with a wry squint is not only patronizing—it's modernist. "The claim that generations transition progressively from one distinctive era to the next, the periodization of history, is a peculiarly modern device," writes Conyers (293).

This essay's comparison of Vico with Michael Polanyi does not argue a genetic relation between the two thinkers. It is true that, like Vico, Polanyi was a friend of the humanities and a foe of the more reductive aspects of the Enlightenment. It is also true that Polanyi's theory of tacit knowing works out a variation on the *verum-factum* principle. But to demonstrate an eidetic relation between Polanyi and Vico would not be true to the intellectual habits of either man. In the following essay, I first put Polanyi and Vico into conversation by locating, or dislocating, their key concerns in the history of ideas. Then I focus on one strand of the humanities, the rhetorical tradition, in order to suggest three ways Polanyi's notions of the relation between eloquence and wisdom redact Vico's notions of the same themes.

II

In order to demonstrate Vico's affinity with postmodern thought, I could show how his ideas respond to what Peter Berger calls "five dilemmas that modernity has imposed on human life": abstraction, futurity, individuation, secularization, and liberation (71).[2] In anticipation of the first four modern dilemmas, Vichian ideas coordinate with much of postmodern critique. But no dilemma is as important for this essay as the last one, liberation, which Berger describes as a condition in which "large areas of human life, previously considered to be dominated by fate, now come to be perceived as occasions for choice—by the individual, or by collectivities, or by both" (*Modern* 76). Not only is the importance of this concept of liberation implicit in Vico's

verum-factum principle (which privileges human creativity and, therefore, human choice), but the concept also appears explicitly in *On the Study Methods of Our Time*, where Vico writes, "Since in our time, the only target of our intellectual endeavors is truth, we devote all our efforts to the investigation of physical phenomena, because their nature seems unambiguous; but we fail to inquire into human nature which, because of the freedom of man's will, is difficult to determine" (33). A careful read-through of that sentence will show why Vico can be hard to position neatly on a modern/postmodern continuum. At first glance, the sentence looks like a postmodern salvo against scientism: Vico is questioning the preoccupation with physical phenomena as a master vocabulary for intellectual inquiry. But the fact that he emphasizes the importance of human will (in ways that recall Berger's description of liberation) begins to make Vico look modernist.

Indeed, the modernist characteristics in Vico's thought show up elsewhere as well. Take, for example, his *Study Methods*, in which he becomes almost rhapsodic about the expansion of modernity in science, exploration, and politics (9-10). Of scientists, he writes, "Do not consider them as groping practitioners of physics: they are to be viewed, instead, as the grand architects of this limitless fabric of the world: able to give a detailed accounting of the ensemble of principles according to which God has built this admirable structure of the cosmos" (10). Such a celebration of physicists does not sit well with some postmodern preachments that science is only another kind of preachment (Schiappa, et al. 114, 116-117; Rorty, *Social* 176; Grenz 46-49). And what about Vico's frank adherence to a metanarrative of providence, in which all the religious instincts of humankind are led to their fulfillment in the revealed religion of Christianity? Or his preferring the geometer over the poet in the development of his *New Science* (Miner 113)? Or what do we make of his praise for "the sage who, through all the obliquities and uncertainties of human actions and events, keeps his eye steadily focused on eternal truth…" (*Study* 35)? Providence? Eternal truth? How can these things be reconciled with a postmodern "incredulity towards metanarratives" (Lyotard xxiv)?

As it turns out, Vico, like Polanyi, is hard to peg as either modern or postmodern. On the one hand, Vichian thought does not hold that the truth is merely out there, wholly independent of human choice or creativity. On the other, his ideas do not comport well with postmodern notions that the truth is wholly a human construct (Luft). Like Polanyi, he seems to believe in knowledge that is at one and the same time subjective and objective, personal and impersonal. Perhaps the blurring of the lines between the modern and the postmodern in Vichian and Polanyian thought is partially explained by noting that they both recognized that the critical question in every era of history is how to negotiate the relation between the dependence and the independence, the createdness and the creativity, of humans.

Furthermore, if it is true, as Conyers has argued (293-295), that a privileging of human will is characteristic of both modern and postmodern sensibilities, then perhaps the most interesting opposition in Vico is not between modernity and postmodernity, but between both and antiquity. Over half a century ago, Lewis wrote, "For the wise men of old the cardinal problem had been how to conform the soul to reality, and the solution had been knowledge, self-discipline, and virtue. For magic and applied science alike the problem is how to subdue reality to the wishes of men" (88). Vico's belief in a fixed natural law in cyclical history suggests his agreement with the ancients, especially in his emphasis on the constancies of the world. But although the Vichian world resisted ceaseless redescription, neither was it absolutely fixed. Here Vico parts ways with both the Greeks and the Cartesians, whose horizons align on the fixity of nature.[3] Unlike many of the ancients and the moderns, Vico made place both for the contingency and for the givenness of truth. As Miner summarizes the Vichian *verum-factum* principle, "Making is the source of our acquaintance with eternal truths that are not of our making" (108).

I have traced Vico's thought from one epoch to another—from postmodern to modern to ancient. This tracing follows the long round of history, what Vico calls in his *scienza nouva* a "rational civil theology of providence" (*New* 152 390).[4] The circle of history began as the race broke the surface of its own brutishness and filled its lungs with the rare air of religiosity and civilization, little knowing that its descendents would submerge again into barbarism. The troglodyte ascended to the Greek only to descend to the medieval and rise again in the Renaissance man. This is "the *ideal eternal history* through which the history of all nations must in time pass" (*New* 154 393).

No wonder, then, considering this cyclical view of history, it is difficult to position Vico as more sympathetic with the ancients or with the (post)moderns.[5] On the one hand, his *scienza nouva* corrects for the decidedly modern habit of underestimating the givens of human experience, those aspects of the human condition that are responsive to a calling from outside ourselves. But at the same time, although honoring the role of divine providence in history, Vico manages to honor human agency as well.[6]

Polanyian readers will recognize in Vico two important commonalities between *scienza nouva* and the tacit dimension. First, an attempt to position Vico in the history of ideas reveals what Nancy S. Struever calls "dislocative" tendencies in Vichian thought (qtd. in Luft ix)—tendencies that recall the similarly synchronic intellectual habits of Polanyi, who in the middle of the twentieth century was attempting a rescue of modernity by calling for a postmodern epistemology attentive to premodern commitments.[7] Second, Vico is like Polanyi in his preoccupation with the convertibility of knowing and making, or the "fusion of the personal and the objective" (*PK* viii).

Having attempted to put Vico's notions into conversation with the history of ideas, this essay now focuses on one strand of the humanities, the rhetorical tradition. The convertibility of knowing and making, which has preoccupied the first sections of this essay, emerges in the following section in terms of the ancient rhetorical inquiry into the relation of wisdom and eloquence.

III.

Wisdom has been held by some rhetoricians (generally associated with Plato) as wholly distinct from eloquence. Other thinkers (roughly identified with Aristotle or Cicero) insist that wisdom may be discovered by means of eloquence. The former position tends to emphasize that wisdom is something that humans contemplate without any help by eloquence; the latter that wisdom is something that humans at least partially create by means of eloquence.

To understand Vico on the subject of wisdom and eloquence, we must first turn to a thinker whose influence is felt throughout Vichian rhetorical theory: Cicero. In *De Oratore*, Cicero defines eloquence as "one of the supreme virtues…which, after encompassing a knowledge of facts, gives verbal expression to the thoughts and purposes of the mind in such a manner as to have the power of driving the hearers forward in any direction in which it has applied its weight" (III.xiv.55). So, put simply, eloquence is the means of persuasively communicating a message. But in the Ciceronian tradition, the means is so closely identified with the message, that eloquence must always be linked with wisdom: "the stronger this faculty [of eloquence] is," writes Cicero, "the more necessary it is for it to be combined with integrity and supreme wisdom" (III.xiv.55). As Vico writes of himself in his third-person autobiography: "He never discussed matters pertaining to eloquence apart from wisdom but would say that eloquence is nothing but wisdom speaking" (199). For the same reason, in his first

oration, he refers to Cicero as "the most eloquent of the wise men, or the wisest of the eloquent men" (*Humanistic* 38). And in the sixth oration, he refers to eloquence as one of the duties of wisdom in order "to tame the impetuousness of the fools" (130). Always and again, the acquisition of wisdom should be followed by the eloquent conveyance of this wisdom to one's community (132).

But what is wisdom? In a word, it "consists in the knowledge of things divine and prudent judgment in human affairs and speech that is true and proper" (132). Knowledge, judgment, and eloquence—these are three integral aspects of wisdom, but they all find their beginning, for Vico, in knowledge of self. The first Vichian oration includes an adaptation of the Delphic summons: "Know thyself, therefore, O youth, so that you can attain wisdom, since you are born for wisdom" (40). As usual, Vico appropriates Cicero's gloss on this phrase and tells the student audience that to know oneself is to know one's spirit (39), for the rhetorical tradition has, until the twentieth century, tended to be rather distrustful of the body. Vico appears to associate purity with spirit, whereas the body is something that must be constantly reigned in. For example, when he explains that just as God fills the creation without being limited by it, so the human spirit fills the body, he adds tellingly, "Both are free of all materiality and, unmixed with any corporality, they act in their purity" (40-41).

To know oneself, furthermore, is to be transformed. Miner's exposition of Vico's *On the Most Ancient Wisdom of the Italians* and *De mente heroica* makes clear that the Vichian quest for truth is dependent on understanding the workings of the human mind. This is a quest with radically transformative implications. In short, this self-focused epistemic project requires a radical self-denial. Call it the existential equivalent of the Uncertainty Principle: the self cannot be known without being changed.

So much for Vico on eloquence and wisdom. To describe the role of eloquence in the work of a chemist cum philosopher of science like Polanyi, on the other hand, might seem a stretch. But rhetorical concerns actually play a prominent role in his cultivation of a wise and "truer intellectual life" (*PK* 189), even when he seems to be eschewing traditional rhetoric altogether:

> I do not assume that I can force my view on my opponents by argument…. Yet where the metaphysical believer cannot hope to convince, he may still strive to convert. Though powerless to argue with the nihilist he may yet succeed in conveying to him the intimation of a mental satisfaction which he is lacking; and this intimation may start in him a process of conversion." (*SFS* 81).

Here, he admits that he does not construct his argument in the familiar point-proof, point-proof, point-proof-*win* format. But even so, his rhetorical impulse is firmly in place: "Every scientist feels the urge to convince his fellow scientists of the rightness of his own claims" (51). Even in so abstract an argument as a mathematical proof, discourse does far more than simply transfer data: such a communication *persuades*, because it is "guided by the specific purpose of establishing a particular implication and compelling its acceptance. It endorses this purpose as worthy of a great effort, and sets up standards of economy and beauty for the manner of its achievement" (*PK* 119). If the "achievement" Polanyi describes is anything akin to wisdom, then his emphasis on beauty's role in persuasion suggests that Polanyian rhetoric must be eloquent to be wise.

But even if the role of eloquence be acknowledged in Polanyian thought, does he allow a place for wisdom? Polanyi is so much less homiletic than his Italian counterpart that it seems quixotic to look for so

morally charged a concept as wisdom in the tacit dimension.[8] But the Delphic Oracle speaks through Polanyi as well as through Vico, especially when *The Study of Man* insists "that a conversion to a truer way of *being a man* will induce a better *understanding of man*" (82-83). Indeed, it is not just in knowing ourselves that we become wiser: the act of knowing, or "indwelling," anything requires that we make what we are indwelling "an extension of ourselves through our subsidiary awareness of it" (*PK* 61). In this indwelling, we find ourselves transformed, because, as Polanyi insists, "every act of understanding somewhat rectifies our being" (*SM* 82).[9]

Having identified some convergences between Vichian and Polanyian understandings of the wisdom/eloquence relation, I should like to suggest three ways that Polanyi redacts Vico's understanding of the relation between wisdom and eloquence. In short, Polanyi offers a more embodied, abductive, and aural view of rhetoric than does Vico.

IV

Polanyi's understanding of the role of the body in human knowing is more adequate to the rhetorical tradition than is Vico's distrust of the body. For Polanyi, the body is where knowledge begins, because the act of knowing always starts from a pouring of our bodily selves into the world (*PK* 58-59, 98). This notion that knowing must be embodied matters immensely, because wisdom, understood rhetorically, is as much about body as about mind, as much about subsidiaries as about focal points. To diminish the importance of what we are attending *from* in order to honor what we are attending *to* is a vain project, especially for the rhetorical tradition in which the means matter as much as the message, the style as much as the substance.

But Vico distrusts the body, considering it a site for folly (*Humanistic* 61-62). This distrust obtains not only for the individual, sensual fool, who is condemned in the Second Oration, but also for the broader human species in his description of primitive humans, "the children of the human race," whom he scorns in the *New Science* (93 209). "With the aid of metaphysics, I have finally been able to descend into the confused minds of the first founders of the pagan nations, which were filled with vivid sensations and unbounded fantasies. Such people had only a dull and dim-witted capacity for applying their human reason" (4 6). Accordingly, "the earliest men, as the children of the human race, were unable to conceive rational categories of things . . . . " (93 209). Early humans did less ratiocination about things than remembering similarities between things. In other words, Vico thought their fables were, as Robert Miner explains, essentially mimetic (113). By continual imitation of the world around them, they gradually developed a mythology (92-93 206, 209) that employed the '"eyes of the body,'"[10] in contrast to the Greeks who used the "eyes of the mind" (152 391). [11]

Polanyi not only trusts the body more than Vico, but may also have a greater respect for the primitive mind. Or perhaps it would be more accurate to say that Polanyi trusts the modern mind less than Vico does. Primitive and modern epistemologies, Polanyi argues, are alike in what he calls their functional aspects (*TD* 10-13). To use his terms, both the primitives and the philosophers were attending *from* proximal details *to* distil realities. The difference between the two is semantic in that the primitive imagination "greatly exaggerates the interaction between subsidiaries and their focus"; whereas the modern imagination "*fails* to note the deep-set qualities of the from-to relations and seeks to reduce the human mind to a predictable system of responses" (*M* 137-138).

He cites as a corroborative example, Evans-Pritchard's study of the Azande's rejection of scientific explanations for their oracle. Vico would probably call these people superstitious, mythic, uncategorical.[12] But

Polanyi is able to be more generous all around, because he considers the functional relation between the implicit beliefs and the explicit belief system of the tribe to be strikingly like modern scientific reasoning. As Polanyi insists, modernist

> objectivism, which tolerates no open declaration of faith, has forced modern beliefs to take on implicit forms, like those of the Azande. And no one will deny that those who have mastered the idioms in which these beliefs are entailed do also reason most ingeniously within these idioms, even while—again like Azande—they unhesitatingly ignore all that the idiom does not cover. (*PK* 288).

The tribal and scientific epistemologies both make sense of things by indwelling tacitly known subsidiaries. It is not so much the case that the Azande is imaginative and the scientist abstract, but rather that that they both creatively fuse subsidiaries to form satisfying conceptions of the nature of things. The adequacy of their imaginative fusings differs because they understand the relationship between the *from* and the *to*, between the subsidiary and focal terms, differently.[13] In terms of the rhetorical tradition, if the *from* corresponds to the means of eloquence (often enough, the body), and the *to* corresponds to the message of knowledge or wisdom (contained in the mind), then the primitive poet is sometimes too preoccupied with eloquence to achieve wisdom. But then, modern scientists have often made the opposite mistake by privileging their own equivalent of wisdom—the pursuit of absolute certainty—at the expense of eloquence.

Now, for the second Polanyian redaction of Vichian rhetorical theory: the abductive nature of eloquence. By *abductive*, I am referring simply to Polanyi's from-to relation, which always involves a tacking back and forth between the *from* and the *to*, as opposed to inductive logic which tends to proceed in linear fashion. Translated into rhetorical terms, a corollary of the from-to relation is that the rhetor-audience relation is abductively, or mutually, influential: what the rhetor believes to be plausible is continuously adapted by what the audience holds to be plausible. For Vico, on the other hand, rhetoric occurs in an inductive, linear, two-step process in which the rhetor first acquires wisdom and then decides how to convey it to the audience (*Humanistic* 14, 133). Even when Vico is at his most non-linear—i.e., when he contrasts the creeping, intellectualist habits of philosophers over against the speedy, intuitive habits of rhetoricians (*Study* 13)—he tends to treat eloquence as if its accommodation were entirely for the audience's sake. For Polanyi, however, eloquence and wisdom are joined for the orator's sake as much as for the audience's.

There is a sense, of course, in which Polanyi also divides rhetoric up into a two-step process: the rhetor discovers, then shares. He distinguishes "a heuristic act" performed by the discoverer of some truth from "the routine teaching and learning of its results" (*PK* 172). In another passage, he distinguishes between "[t]he impulse which in the original heuristic act was a violent irreversible self-conversion of the investigator" and "an almost equally tempestuous process of converting others" (172). But perhaps it would be more accurate to say that these two aspects of eloquence—discovery and conveying—are not so much steps that a rhetor follows to reach an auditor as sites for action and inquiry for the rhetor and the auditor alike.[14] Because the acts of discovering and conveying the truth are convertible, they must be abductively pursued—i.e., the rhetor comes not with a pre-formed, but with a still-forming message. He or she is no less impassioned than Vico's rhetor, but the continuance of the passion is dependent on the responsiveness of the audience.

Whereas for Vico, the second step almost seems optional—the rhetor knows what is true, whether or not anyone else ever agrees—for Polanyi, the rhetor must be heard by the audience—and what is more, must

hear from the audience—in order for the truthfulness of the message to maintain its plausibility. "[W]e suffer when a vision of reality to which we have committed ourselves is contemptuously ignored by others. For a general unbelief imperils our own convictions by evoking an echo in us. Our vision must conquer or die" (*PK* 150). The ecstasy of new knowledge is so fragile that the enjoyment of truth can only be strengthened and sustained as the rhetor compels others to agree that what has been found is indeed trustworthy knowledge. "[T]he ardour of discovery is transformed into a craving to convince" (171). Here is no sovereign rhetor deploying eloquence to persuade an ignorant audience that such and such an action would be wisdom. Instead, the Polanyian rhetorician humbly engages in "a process of verification in which the act of making sure of one's own claims is coupled with the effort of getting them accepted by others" (171). Unless the vision of beauty that originally summoned the discoverer to truth is incarnated in eloquence, wisdom evanesces.

This emphasis on abductiveness leads naturally to the final revision Polanyi offers Vico: an emphasis on the aural over the visual. Scholars familiar with Vico's understanding of human knowing in *On the Most Ancient Wisdom of the Italians*—especially his description of knowledge in textual and spatialized terms—will not be surprised by my criticism of his visualist intellectual habits. His analogy for the act of knowing, for example, is reading, not hearing. His explanation for what gives God superior knowledge is that the divine eyes are able to read to the very center of things, whereas humans are only able to read the world's contours (Miner 97-98)—a decidedly spatial epistemology. In the *New Science*, too, Vico speaks of the eyes, not the ears, of the mind (152 391).

Polanyi's understanding of the wisdom-eloquence relation is that wisdom is aural: it must be heard and heard *out*. This emphasis on hearing, rather than speaking, emerges especially in his call for fairness and tolerance "two main principles underlying the process of free discussion" (*SFS* 68). Unlike Vichian rhetoric, which tends to be sender-oriented (and so more voluble), Polanyian eloquence places a premium on good listening, and even "the capacity to listen to an unfair and hostile statement by an opponent in order to discover his sound points as well as the reason for his errors" (68). Eloquence is not packaging, which the rhetor uses to attract the audience, but rather a project in which speaker and hearer cooperate in order to make persuasion possible for both.

Besides the epistemological examples given above regarding Vico's visualist approach to knowledge (spatial and textual analogies of knowing based on eyes, rather than ears), his understanding of rhetoric also suggests a privileging of the eye over the ear.[15] In *Study Methods*, he impresses young people with the indispensability of the art of topics. This visualist aspect of traditional rhetorical theory depends on the faculty for mastering a series of key verbal "places" that remind the rhetor what is available to say in a given argument (19). Such topics as "genus," "species," or "definition," are the rhetorical equivalent of hyperlinks: double-click on them and they download material for what to say on any subject. Now, as Ong has taken pains to argue, topics have wrongly assumed centrality in rhetorical theory by displacing the equally ancient means of argumentation called categories. Unlike topics, which are static, spatialized, impersonal, and disembodied, categories are aural, relational, thoroughly embodied. (For example, as Ong explains, a topic called "related items" would be a category called "relation.") Category-driven rhetoric depends on predicates, "which can be brought against a subject[,]" as can be seen by the etymology of the word "category" itself, which evokes something aural, an "accusation" or "outcry" (Ong 104-107). Contrarily, Vico's topic-driven rhetoric depends on "the art of finding 'the medium,' i.e., the middle term" in a syllogism (*Study Methods* 15). This itemizes rhetoric and tends to reduce argument to an aggregate of discursive chunks.

The dialogic quality of Polanyian rhetorical practice, on the other hand, makes it more aural than visualist. Granted, it is a *vision* of beauty that initially draws a discoverer "as a token of a hidden reality" (*PK* 189). But that beauty, betokening a hidden, fugitive truth, comes into its own as personal knowledge most richly by being brought into the realm of the interpersonal word, the domain of "conviviality [which] is usually made effective by a more deliberate sharing of experience, and most commonly by conversation" (210). As Josef Pieper writes, "The natural *habitat* of truth is found in interpersonal communication. Truth lives in dialogue, in discussion, in conversation…." (36). I am not trying to say that Polanyi has a bias for the spoken word, over against print, but rather that his notions of wisdom and eloquence make more sense in analogues of hearing than in analogues of seeing. [16]

V.

Although Polanyi and Vico anticipated postmodern thought, both stand foursquare against the tendency of some postmodern scholars to think that the quest for wisdom (in the sense of truth originating from non-human sources) is needless. All that is needed, say some postmoderns, is eloquence, or the rhetorical construction of ever newer and more useful "truths." In this understanding of the wisdom/eloquence dialectic, the primitive poets, which Vico denigrated and Polanyi praised, were simply doing what everybody is always doing: engaging eloquently in nominalist constructions of their own "wisdom." Luft argues, for instance, that in the *New Science*, Vico "comes to understand that only if first men are by nature—that is, *genetically*—makers, only if their making is originary—that is poetic—only if it takes place in linguistic and social behavior and the physical labor made possible by bodily skills, can they make a human place in the world, a clearing in the forest" (113).[17]

This essay should have demonstrated that Polanyi and Vico stand together with the larger rhetorical tradition in saying that neither wisdom (as the pursuit of truth) nor eloquence (as the construction of truth) is dispensable.[18] One responsible way to engage Vichian and Polanyian thought is to attend to the pendulum swing that Gay says moves back and forth between descriptions of the world as dependent or independent, as fixed or free (126-127).[19] Although Polanyi's more embodied, abductive, and aural understanding of wisdom and eloquence may enable a greater appreciation than Vico allows for the non-elective aspects of truth, the Italian humanist nonetheless manages, in a way Polanyi found difficult, to speak explicitly about the role of the divine in human history. At the end of the day, this acknowledgment of providence may do as much as Polanyian thought ever does to honor the given in tandem with the constructed in human knowledge. The two thinkers stand together, in any case, in their conviction that the human vocation is a tacking movement between constancy and contingency—or what Torrance calls "this elusive interlocking of dependence and independence that makes contingence so difficult to grasp and express" (*Trinitarian* 126). This is a way of being in the world in which the self is disposed in wisdom and found in eloquence.

Endnotes

[1] Miner summarizes the principle this way: "if cognition attains a *verum*, and *factum* is interchangeable with *verum*, then cognition may also be described as attaining a *factum*. But a *factum* is attained only through some process of making. Therefore cognition may be understood as essentially a process of making" (97).

[2] As for abstraction, Vico thought it had its place, but that it achieved a lower form of knowledge than that he sought with his new science (Miner 105). Against futurity, or the conviction that "the future becomes a primary orientation for both imagination and activity" (Berger 73), Vico proposed a cyclical view of history

(*New* 483-489 1097-1106). Against radical individualism, he emphasized the importance of tradition (Miner 115). Note, too, that Vico refers to a "barbarism of calculation," a peculiarly modern selfishness resulting in societal breakdown that lasts until the survivors of decadence once again "naturally become sociable" (*New* 488 1106). I am indebted for this insight to Verene's introduction to *On Humanistic Education,* where he connects Vico's phrase "barbarism of calculation" to modernity (*Humanistic* 11) As for secularization, the *New Science* situated Vichian ideas in a metaphysics of providence (Miner 124-125). After modernism's "barbarism," he hoped for a return to the "religious, truthful, and faithful" (*New* 488-489 1106).

[3] Some of Vico's contemporaries, for example, were so committed to Cartesian methods of teaching and learning as to ignore the role of freedom in the creation (*Study* 33).

[4] It all began with a thunderstorm. Early humans heard thunder and interpreted it as the rhetoric of Jupiter, the god of the sky. And though it wasn't entirely clear what the thunder god was saying, "divine providence allowed humankind to be deceived into fearing Jupiter as a false deity who could strike them with lightning" (*New* 150 385). Men started dragging women to caves to hide their sexual acts, and thus marriage was created, "which we may define as a *carnal union modestly consummated in fear of some divinity*" (208 505). Lawgivers then arose, claiming to have deciphered the rhetoric of the god, and they founded nations (*New* 150 385). Eventually, the Gentiles, for whom "providence was the divine teacher of a common wisdom," came to understand natural law (*Autobiography* 172).

[5] Managing this tension gives him a remarkable generosity towards the intellectual habits of different eras. "In the hope of escaping censure, I ask you to give thought to the fact that my purpose is not to criticize the drawbacks of the study methods of our age or of those of antiquity, but rather to compare the advantages afforded by the study methods of the two epochs" (*Study* 5).

[6] Richard Rorty might sum up Vichian thought by shrugging and calling it another entry in the longstanding "quarrel between poetry and philosophy, the tension between an effort to achieve self-creation by the recognition of contingency and an effort to achieve universality by transcendence of contingency" (*Contingency* 25). What else, after all, could Vico do? Privilege science, and he would lose the freedom of the humanities. Privilege poetry, and he would lose the rigor of science. Indeed, either choice offers unpredictable results. "It is ironic," writes Roger Lundin, "that in their zeal to establish irrefutable arguments and unshakeable evidence for the truth, Descartes, Spinoza, and others made possible the relativism and nihilism of our present century" (246). Following Miner's interpretation of Vico, the present essay tries to highlight the ways that Vico manages to avoid an easy dualism between science and poetry—an accomplishment that Polanyi managed as well.

[7] I shall have more than one occasion in this essay's comparison of Vico and Polanyi to remark that the two thinkers do not enjoy complete affinity. Vico is perhaps the readier to identify differences among ways of knowing than Polanyi, who was concerned to identify what was at least functionally common to human knowing across time.

[8] To deny that Polanyi is concerned with wisdom may imply the conviction that fact ought to be compartmentalized from value. After all, a chemist and philosopher would supposedly be more interested in facts than values. But this a division that Polanyi says cannot be reconciled with the "personal co-efficient, which shapes all factual knowledge" (*PK* 17).

[9] Interestingly enough, Polanyi refers to this renovating self-investment as "a manner of disposing ourselves" (61), a term which shares some kinship with an ancient rhetorical concept for the arrangement of an argument, "disposition." Further research might be done to develop a genealogy of this term to show its connections with the rhetorical tradition. But the fact that Polanyi uses a rhetorical term does not alone establish its connection with the Ciceronian rhetorical tradition.

[10] He cites Aristotle's famous dictum that "[n]othing is found in the intellect which was not found first

in the senses" and sees this as a corroboration of his notion that poets, "the *sense* of mankind," practice a knowing that is discrete from the epistemology of the philosophers, the "*intellect*" of the race (136 363).

[11] Admittedly, though Vico considers mimesis inferior to more modern ways of knowing, he argues that their poetic constructions were divinely guided for the establishment of civil societies. He holds that "the fables are true in their form, but false in their matter" (Miner 111). Another way to cast this is to say that while primitive eloquence was admirable, it did not lead to wisdom.

[12] He would not deny that providence has worked with such primitive minds for the common good of humankind, and perhaps he would allow that the barbarities of positivism might also conspire with the divine in order to find some measure of truth.

[13] As Polanyi writes, "The process of selecting facts for our attention is indeed the same in science as among Azande; but I believe that science is often right in its application of it, while Azande are quite wrong when using it for protecting their superstitions" (*PK* 294). I am grateful to Phil Mullins for reminding me of the importance of Polanyi's fallibilism at this point in my exposition.

[14] I am grateful for this insight to Nothstine, Blair, and Copeland for their discussion of Sonja K. Foss's textbook on rhetorical criticism. Her step-by-step procedure for writing criticism "is a crucial effort; each of the four moments she describes constitutes at least a locus for the choices that the critic must make" (54).

[15] Granted, Vichian eloquence is aural in that it acknowledges the role of the audience, especially when he emphasizes the importance of probability, imagination, and memory in making persuasion possible (*Study* 13-14).

[16] Other confirmations of this privileging of the aural appear in Polanyi's continual contrasting of observation with indwelling (*PK* 378-379); his use of examples that diminish the importance of sight (*SFS* 22-24); his associating of positivism with mere observation (*PK* 9); his relativizing of perception (*PK* 96-97); and his insistence that knowledge is rooted, not in the mind watching the world through the eyes, but in the whole of the body (99). I should like to add that I first encountered the insight that Polanyi deemphasizes visualist epistemology in Jerry Gill's fine book, *The Tacit Mode*.

[17] It is peculiar that Luft, who painstakingly develops a non-genetic, non-linear, non-eidetic reading of Vico, nonetheless argues that scholars who overemphasize Vico's metaphysics in *On the Most Ancient Wisdom* neglect the fact that the *New Science*, which she insists offers a completely different approach to metaphysics, came twenty years later. To emphasize the *New Science* over the *On the Most Ancient Wisdom* simply because it came two decades later is a markedly genetic, linear, and eidetic sort of scholarship.

[18] Despite Luft's insistence that Vico came to love the primitive's poetic constructions, the opposite actually seems to be the case: Vico was not very impressed with what Miner calls the "mythopoesis" of the primitives. Despite Luft's argument that primitive poets created as God creates—that is, by speaking things into existence out of nothing—Miner points out "that Vico takes the creativity of poetic man to fall infinitely short of divine creativity" (112). In fact, Miner continues, the Vichian project of developing a *scienza nouva* is to identify how human truth-seeking and truth-making can participate in divine creativity by means of an intellection that is more like that of the geometer than of the poet (113, 116, 124-125).

[19] Western theology has tended either to overemphasize the *dependence* of the created order, thus minimizing human creativity and discouraging a genuinely empirical science, or to stress the independence of the created order in such a way as to suggest that it is *self*-supporting and *self*-interpreting, and thus entirely comprehensible by means of humanly devised sciences (*Gay* 127).

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Submissions for Publication

Articles, meeting notices and notes likely to be of interest to persons interested in the thought of Michael Polanyi are welcomed. Review suggestions and book reviews should be sent to Walter Gulick (see addresses listed below). Manuscripts, notices and notes should be sent to Phil Mullins. Manuscripts should be double-spaced type with notes at the end; writers are encouraged to employ simple citations within the text when possible. MLA or APA style are preferred; because the journal serves English writers across the world, we do not require anybody's "standard English." Abbreviate frequently cited book titles, particularly books by Polanyi (e.g., *Personal Knowledge* becomes *PK*). Shorter articles (10-15 pages) are preferred, although longer manuscripts (20-24 pages) will be considered. Consistency and clear writing are expected.

Manuscripts normally will be sent out for blind review. Authors are expected to provide a hard copy and a disk or an electronic copy as an e-mail attachment. Be sure that electronic materials include all relevant information which may help converting files. Persons with questions or problems associated with producing an electronic copy of manuscripts should phone or write Phil Mullins. Insofar as possible, *TAD* is willing to work with authors who have special problems producing electronic materials.

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Emergent Monism And Final Causality: A Field-Oriented Approach

Joseph A. Bracken, S.J.

ABSTRACT Key Words: entelechy, final causality, morphogenetic field, society as structured field of activity, actual occasion, common element of form, Alfred North Whitehead, Michael Polanyi, Rupert Sheldrake.

Polanyi's vision of the cosmic process as undergirded by a logic of emergence common to both the mental life of human beings and the processes of non-human nature can be vindicated if one is prepared to make certain adjustments in the notion of morphogenetic fields with an active center or organizing principle. Given the author's field-oriented interpretation of Whiteheadian societies, it should be possible to think of entelechies or final causes in developmental rather than strictly Aristotelian terms. That is, the "common element of form" or organizing principle of a Whiteheadian society depends for its own existence on the spontaneous activity of previous sets of actual occasions and yet serves as the ongoing principle of formal and final causality for the present set of actual occasions and still others to follow it. In Aristotelian language, matter and form thus dialectically condition one another and neither is ontologically superior to the other.

In Part Four of his book *Personal Knowledge*, above all, in the concluding chapter entitled "The Rise of Man," Michael Polanyi endorses the notion of "morphogenetic fields" as the key to the proper understanding of evolution.[1] That is, in contrast to the standard explanation of evolution in terms of Neo-Darwinism, the synthesis of Darwin's principle of natural selection and modern genetics, Polanyi saw the evolution of life-forms through what he called a logic of emergence much akin to the mental process of discovery for human beings. Just as human beings are frequently guided at first only by a hunch as to the solution of some problem and then either achieve success or admit failure, depending upon whether that hunch proves to be correct or not, so within Nature evolution seems to take place when the components of a lower-level system are consciously or for the most part unconsciously drawn into a new higher-level unity and organization in virtue of an implicit organizing principle operative within the system or morphogenetic field of activity to which they all belong.[2] Polanyi, to be sure, frankly admits that this notion of a morphogenetic field and its immanent organizing principle is finalistic: "It attributes to certain achievements – whether self-centered or aiming at universality - the power to promote their own realization."[3] But, he argues, "[b]iology is life reflecting upon itself, and the findings of biology must prove consistent with the claims made by biology for its own findings."[4] Thus if heuristic fields are clearly operative within the human mind seeking understanding of the world around it, why should there not be morphogenetic fields likewise operative within Nature?

In a recent issue of *Tradition and Discovery*, however, both Philip Clayton and one of his commentators Walter Gulick expressed serious reservations about this feature of Polanyi's philosophy. Clayton argued that Polanyi made a serious mistake in adopting the vitalism associated with the research of Hans Driesch on the regenerative powers of the embryo of sea urchins since he thereby put himself in clear opposition to the working assumptions and the empirical results of most research in contemporary biology.[5] Gulick agreed, noting that contemporary complexity theory "shows how emergent, stable patterns may spontaneously develop in large, multi-faceted systems; the existence of mysterious pre-existing principles need not be postulated."[6]

Yet this symmetry of being and knowing in terms of a logic of achievement operative in both the human mind and implicitly in all of organic nature seems to be foundational for Polanyi's philosophical scheme as a whole.[7] Is there a way then in which Polanyi's notion of morphogenetic fields can be usefully employed without reverting to a basically Aristotelian notion of "entelechy" whereby form is ontologically superior to matter since it is its antecedent organizing principle?

Over the last twenty years I have been working on a revision of the philosophy of Alfred North Whitehead with respect to the latter's doctrine of "societies," namely, aggregates of actual occasions (momentary self-constituting subjects of experience) linked together by a "common element of form" or analogous pattern of existence and activity.[8] My argument has been that Whiteheadian societies, since they for the most part correspond to the relatively stable persons and things of common sense experience, must be more than just aggregates of analogously constituted actual occasions. For, as such, these aggregates would come into and go out of existence as rapidly as their constituent actual occasions, and no metaphysical ground for their ongoing existence and activity would be guaranteed. Hence, I have urged that Whiteheadian societies should instead be treated as structured fields of activity for their constituent actual occasions.[9] The structure within the field is, to be sure, ontologically dependent upon the interrelated activity of successive actual occasions (or sets of actual occasions in the case of Whiteheadian societies extended in space as well as time). But the field endures as these actual occasions or sets of actual occasions come and go. Furthermore, the structure embedded in the field by reason of the activity of previous actual occasions or sets of actual occasions heavily conditions the self-constituting activity of the present set of actual occasions.

The net effect of this arrangement is that there is indeed a form or organizing principle within every Whiteheadian society at any given moment. But the form is not active as an Aristotelian substantial form or entelechy is active with respect to its material components. Rather, the form is passive, both because it originated in virtue of the self-constituting activity of an antecedent actual occasion or set of actual occasions and because it is simply "prehended" by the next actual occasion or set of actual occasions. Like an Aristotelian substantial form, therefore, it antedates the material components which it here and now "informs." But, unlike an Aristotelian substantial form, it "informs" its components not in virtue of its own substantial activity but simply by being there as an object of prehension or activity on the part of the next actual occasion or set of actual occasions. Furthermore, unlike an Aristotelian substantial form, the form or pattern of existence and activity within a Whiteheadian society is as a result never exactly the same from moment to moment. It undergoes a slow but steady transformation as a result of new actual occasions or new sets of actual occasions constituting themselves in slightly different ways than their predecessors and thus collectively achieving a new "common element of form." It thereby serves as an entelechy or organizing principle for a Whiteheadian society, but it is strictly a developmental entelechy passively dependent upon the activity of its material parts or members, namely, its constituent actual occasions from moment to moment.

As I see it, if one were to apply this revised notion of a Whiteheadian society to Polanyi's notion of a morphogenetic field, then most of the objections raised by Clayton and Gulick would disappear. The morphogenetic field would possess an immanent principle for the organization of its material components at any given moment. But, insofar as this immanent principle would be passive rather than active with respect to its material components, and insofar as this immanent principle would itself be in process of change or development in virtue of the activity of those same material components, then one could not give ontological priority to the immanent principle over the material components as Aristotle gave ontological priority to form over matter. Rather, it would be the field as a whole which would undergo gradual change in virtue of the

interrelated functions of the material components and their immanent principle of organization from moment to moment (in the language of Whitehead's philosophy, actual occasions and their "common element of form"). Furthermore, since the material components, the actual occasions, are by definition self-organizing and thus open to change in various ways (e.g., through external environmental influences and, as we shall see below, through what Whitehead calls "divine initial aims"), this scheme amply provides for "bottom-up" as well as "top-down" causation in the explanation of evolution.

One must admit, of course, that this scheme for the emergence of novel forms within an evolutionary process is not fully consistent with either Polanyi's or Whitehead's metaphysical system. It is a conscious hybrid of both systems. On the one hand, it incorporates the basic insight of Polanyi that the whole is always more than (and to some extent other than) the sum of its functioning parts, an insight which seemed to elude Whitehead in his analysis of actual occasions and the societies into which they aggregate. For, as he admits in *Process and Reality*, "[t]he ultimate metaphysical truth is atomism. The creatures are atomic."[10] On the other hand, this scheme allows for Whitehead's foundational insight into the reality of actual occasions, momentary self-constituting subjects of experience, as "the final real things of which the world is made up."[11] Polanyi, on the contrary, limited the functioning of morphogenetic fields together with their organizing principles to organisms, however minuscule. Hence, in terms of this scheme Polanyi would be obliged to extend his logic of achievement in an attenuated form to the world of inanimate things. Not the things themselves, of course, but their ultimate components, namely, actual occasions as momentary self-constituting subjects of experience, would be engaged in a "logic of achievement" within certain limits. This might well seem incredible, of course, until one recollects that easily the longest time-span within the overall cosmic process (at least as it is presently understood) was involved in the gradual growth in complexity from non-life to life rather than in the later progression from plant and animal life to rational life.

Accordingly, even though inanimate things in themselves are clearly not governed by a logic of achievement or a logic of emergence, one can argue that the ultimate components of inanimate things, namely, momentary self-constituting subjects of experience, can be evaluated in terms of success or failure in maintaining a balance between order and novelty proper to their own niche and function within the overall cosmic process. For, as Whitehead notes, too much order in terms of the common element of form for a given set of actual occasions leads to stagnation; too much novelty in terms of that same common element of form leads either to collapse of the order already attained or to the achievement of a still higher level of unity and organization for the society in question.[12] The eventual flourishing of life-forms on this planet eventually happened only because the actual occasions constitutive of some inanimate Whiteheadian societies successfully negotiated the jump from a lower-level to a higher-level form of existence and activity within the cosmic process. The overall stability of the cosmic process, to be sure, demanded (and still demands) that most societies of actual occasions corresponding to the inanimate things of this world not make the jump to primitive living organisms. For they provide the stable infrastructure to the more fragile aggregates of actual occasions found in the world of organisms.[13] But certainly a logic of achievement governed the slow but sure movement from non-life to life within the cosmic process.[14]

In the remainder of this essay, I will cite passages out of works by Polanyi, namely, *The Tacit Dimension* and *Personal Knowledge*, that seem to be compatible with this approach to Whiteheadian societies as structured fields of activity for their constituent actual occasions. Likewise, I will make brief reference to the work of Rupert Sheldrake who in *A New Science of Life* expands upon the notion of morphogenetic fields. In *The Tacit Dimension*, for example, Polanyi notes that "in an act of tacit knowing we attend from something

for attending to something else, namely, from the first term to the second term of the tacit relation. . . . Using the language of anatomy, we may call the first term proximal and the second term distal. It is the proximal term, then, of which we have a knowledge that we may not be able to tell."[15] As I see it, this "from-to" relation in Polanyi's scheme bears a notable resemblance to Whitehead's celebrated description of creativity in *Process and Reality* as the principle whereby "[t]he many become one and are increased by one."[16] Furthermore, thus understood, Polanyi's "from-to" relation illuminates both Whitehead's understanding of the self-constitution of actual occasions and my own hypothesis about the "common element of form" within Whiteheadian societies.

To be specific, a Whiteheadian actual occasion prehends innumerable past actual occasions and integrates them into the unity of its own self-constitution in virtue of an immanent "decision."[17] In Polanyi's terms, it recognizes or, perhaps more precisely, creates a Gestalt in terms of which it can become a unified reality among many other such unified realities, neighboring actual occasions. Its awareness of its prehensions is tacit rather than explicit since its implicit focus is on what it is becoming. So this is the application of the "from-to" relation in the sphere of knowing, but the same structure also applies in the sphere of being, namely, the formation of Whiteheadian societies with an objectively prehensible "common element of form." That is, the many actual occasions co-constituting a Whiteheadian society from moment to moment are likewise an instance of the "from-to" relation or, in Whitehead's terminology, the many becoming one and being increased by one. For here, too, there is a move from tacit awareness of one another on the part of a set of actual occasions to their explicit recognition or, more precisely, co-creation of an objectively prehensible form. The "common element of form" for a Whiteheadian society, in other words, both is and is not the same as the form constitutive of the self-constitution of the individual actual occasions. It is rather what they have in common, not what each is in particular. As such, it represents in Polanyi's language their "meaning," what they are together here and now as the product of their dynamic interrelation.[18] Or, to use another expression from Polanyi's analysis of tacit knowing, each of the constituent actual occasions in a Whiteheadian society "indwells" the "common element of form," interiorizes it even as the occasion intuitively recognizes that this same common element of form for the society as a whole is somehow distinct from itself and its own individualized pattern of self-constitution.

Turning now to texts out of *Personal Knowledge*, we find further ways in which Polanyi's metaphysical insights illuminate what Whitehead means by the self-constitution of an actual occasion and what I have in mind for the organization of a Whiteheadian society. Polanyi, for example, claims that an organism, however minuscule, is different from an inanimate thing because it has a center: "The focus of our comprehension is now something active, that grows, produces meaningful shapes, survives by the rational functioning of its organs."[19] From a Whiteheadian perspective, one could argue that this is likewise a generic description of an actual occasion as a self-constituting subject of experience. For an actual occasion too is an active center of activity, organizing its physical and conceptual prehensions into the "satisfaction" characteristic of its own completed state of being.[20] In its internal process of concrescence it exhibits final causality and in its status as a "superject" capable of prehension by subsequent actual occasions it exercises efficient causality.[21] In this sense, every actual occasion, even an actual occasion constitutive of an inanimate thing, is an individual entity in Polanyi's sense. It exists "as an aim in itself," quite apart from its usefulness for human beings.[22]

A few pages later, Polanyi makes the following comments about the notion of "commitment" even at the vegetative level: "it is of the essence of a living organism that each part relies for its function, and for its very meaning as part of the organism, on the presence and functioning of a number of other parts."[23] Implicitly this is what Whitehead is also claiming in his description of a society as a nexus of actual occasions with a social

order. The actual occasions, says Whitehead, have a "genetic" relation to one another in that only by their interrelated activity vis-à-vis one another do they achieve a "common element of form" and become a society instead of a purely coincidental aggregate of actual occasions which could dissolve in the next moment.[24]

What I have maintained over against Whitehead is that this common element of form has somehow to stay in existence as the principle of continuity between successive sets of actual occasions. In my judgment, as noted above, it stays in existence as a structured field of activity for those same sets of actual occasions, dependent for its form or structure on the current set of occasions and yet serving as the "ordering principle," in Polanyi's terms, for the next set of occasions. As such, it is a morphogenetic field, giving a Gestalt or recognizable shape and pattern of activity to its current members but itself in slow process of evolution toward a goal yet to be realized in its fullness. For, the field is always open to a new pattern to be achieved by future sets of actual occasions even as it provides a direction for the achievement of that goal here and now by its present mode of existence and activity.

As I see it, this is also what Rupert Sheldrake had in mind with his own understanding of morphogenetic fields in *A New Science of Life*. Therein he describes morphogenetic fields as spatial structures which, like electromagnetic and gravitational fields, are "invisible, intangible, inaudible, tasteless and odorless;"[25] but also like electromagnetic and gravitational fields they have measurable empirical effects on the entities or systems contained within them. The field determines both the internal structure and the external appearance of those same entities or systems. Moreover, says Sheldrake, morphogenetic fields "are not in themselves energetic; but nevertheless play a causal role in determining the forms of the systems with which they are associated."[26] Restated in terms of Aristotle's traditional four causes, morphogenetic fields do not exercise efficient causality on their component systems but they do exercise formal and final causality. That is, they "inform" their components here and now but always in anticipation of still further specification of that same form in the future.

These comments by Sheldrake correlate very nicely with my own understanding of Whiteheadian societies as structured fields of activity for their constituent actual occasions. The field is objectively real but does not possess the same kind of actuality as its constituent actual occasions which, as Whitehead notes, are "the final real things of which the world is made up."[27] The field, accordingly, cannot be prehended physically as a contemporary actual occasion prehends its predecessor(s). It can only be prehended conceptually as a pattern or structure of existence and activity. As such, the field exercises no agency in terms of efficient causality since its current structure is simply prehended by newly concrescing actual occasions within the field; but it does exercise agency indirectly in terms of formal and final causality. It orders and structures the physical energy coming from predecessor actual occasions and thereby communicates to current actual occasions what Whitehead calls a "subjective form" to which these new occasions must somehow conform so as collectively to achieve "satisfaction" as a society with a specific pattern of existence and activity here and now.[28]

Subsequently Sheldrake speaks of the need for a "morphogenetic germ" or subsystem within a given morphogenetic field in order to give further order and structure to the field as a whole:

> The morphogenetic germ is a part of the system-to-be. Therefore part of the system's morphogenetic field corresponds to it. However, the rest of the field is not yet 'occupied' or 'filled out'; it contains the virtual form of the final system, which is actualized only when all its material parts have taken up their appropriate places.[29]

Here, of course, is where Sheldrake (like Polanyi before him) can be rightly accused of importing an outdated Aristotelian understanding of final causality into contemporary biology. For, there is no guarantee that the morphogenetic field as a whole will inevitably take on the form or structure proper to the "morphogenetic germ." Yet, as I see it, there is a way out of this difficulty if one thinks of Whiteheadian societies as structured fields of activity for their constituent actual occasions.

All that is required is to reconceive in terms of hierarchically ordered fields what Whitehead meant by "structured societies," that is, more complex societies composed of subsocieties of actual occasions.[30] A subsociety of actual occasions or a subfield of activity within a morphogenetic field can undergo a change of form or structure which is initially limited to that subfield and not yet extended to the morphogenetic field as a whole. But there is no inevitability that the change of form or structure within the subfield will spread to the morphogenetic field as a whole. What is inevitable is that the actual occasions within other subfields of activity will "prehend" this change of form or pattern on the part of their neighbors within the overall morphogenetic field. But as self-constituting subjects of experience, these other actual occasions are "free" to incorporate the new pattern of existence and activity into their own process of concrescence in which case the subfield will truly act as a "germ" for the spread of a new form or pattern for the morphogenetic field as a whole. Or they will "decide" (consciously or unconsciously) not to incorporate the new pattern into their individual and collective self-constitution in which case the subfield will sooner or later cease to exist as part of the overall morphogenetic field. There is, accordingly, no way to know in advance how the morphogenetic field as a whole will respond to this perturbation in its current pattern of existence and activity.[31]

This, of course, raises the further question how even a subfield of activity within a broader morphogenetic field could undergo a change of form or structure. On this point Sheldrake concedes that there is no scientific answer: "the question concerns unique and energetically indeterminate events which, ex hypothesi, once they have happened are unrepeatable because they themselves influence all subsequent similar events. Science can only deal with regularities, with things that are repeatable."[32] At the end of his book he lists four possibilities for such an unexpected change of form or pattern within morphogenetic fields: pure chance, the influence of the conscious self on the body and its physical environment, a creativity inherent within the cosmic process or, finally, a transcendent creative agency.[33]

While agreeing with Sheldrake that there is no single explanation for the appearance of novelty within the cosmic process, I would maintain that with reference to the possibility of a "transcendent creative agency" Whitehead's notion of "divine initial aims" provides a plausible explanation of how God can be invisibly at work in the cosmic process. Divine initial aims according to Whitehead are derived from the ongoing integration of the primordial and consequent natures within God and are communicated to individual actual occasions so as to guide their individual processes of concrescence.[34] Thus God can "inform" or give direction to the self-constitution of individual actual occasions and to the societies into which they aggregate without interfering with the laws of nature, the normal operation of the cosmic process. God thereby gives order and direction to the cosmic process but always with a view to the spontaneous self-determination of individual actual occasions.

Polanyi's remarks at the very end of *Personal Knowledge* seem to point in the same direction and could well serve as a conclusion to this essay. In a subsection entitled "First Causes and Ultimate Ends," Polanyi notes:

> [K]nowing belongs to the class of achievements that are comprised by all forms of living, simply because every manifestation of life is a technical achievement and is therefore - like the practice of technology - an applied knowledge of nature. But in order to express correctly this kinship of knowing and living, fields must be interpreted throughout biology in accordance with their finalistic character, as fields of opportunity and of a striving directed toward this opportunity.[35]

While acknowledging that most biological fields are neither conscious nor deliberate, there is invariably present within them an active center which within the human species achieves the rank of full personhood. This is, as noted above, much akin to Whitehead's notion of structured societies, societies composed of subsocieties of actual occasions, or to my own vision of fields within fields.

Polanyi concludes: "We may envisage then a cosmic field which called forth all these centers by offering them a short-lived, limited hazardous opportunity for making some progress of their own toward an unthinkable consummation. And that is also, I believe, how a Christian is placed when worshipping God."[36] Here the affinity with Whitehead's scheme is apparent; according to Whitehead, the world is constantly being incorporated into the consequent nature of God as the sole enduring actual entity.[37] But, as I see it, Polanyi's vision of a cosmic field calling forth finite centers of opportunity and achievement is even more dramatically illustrated in my neo-Whiteheadian vision of the God-world relationship. For, as I have made clear in previous publications, the three divine persons of the Christian doctrine of the Trinity can be said to co-constitute the cosmic field of activity into which all the more limited fields of activity proper to the world of creation can be integrated and hierarchically ordered.[38] Thus the "unthinkable consummation" to which Polanyi alludes is not just integration into an impersonal cosmic field which is itself of finite duration but rather integration into the divine communitarian life which is on principle endless. Details of how this eschatological consummation will presumably be achieved are available elsewhere.[39]

The key point to be made in this essay is then that, properly understood, Polanyi's vision of the cosmic process as undergirded by a logic of emergence common to both the mental life of human beings and the processes of non-human nature can be vindicated if one is prepared to make certain adjustments in the notion of morphogenetic fields with an active center or organizing principle. Such a notion does not necessarily imply a commitment to a strictly Aristotelian understanding of final causality in which the entelechy or final cause is conceptually determined in advance of its practical implementation. Rather, as I have tried to make clear with my field-oriented interpretation of Whiteheadian societies, it should be possible to think of entelechies or final causes in developmental terms. That is, the "common element of form" or organizing principle of a Whiteheadian society depends for its own existence on the spontaneous activity of previous sets of actual occasions and yet serves as the ongoing principle of formal and final causality for the present set of actual occasions and still others to follow it. In Aristotelian language, matter and form thus dialectically condition one another. As a result, neither enjoys ontological superiority; both are needed in the service of the total organism as it follows its own inherent logic of emergence or achievement.

Endnotes

[1] See Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (New York: Harper & Row, 1964), pp. 354-59, 398-400.

[2] *Ibid*., pp. 383-85, 398-99.

[3] *Ibid*., p. 399.

[4] *Ibid*., p. 347.

[5] See Philip Clayton, "Emergence, Supervenience, and Personal Knowledge," *Tradition and Discovery* XXIX (2002-03), n. 3, pp. 11-12.

[6] See Walter B. Gulick, "Response to Clayton: Taxonomy of the Types and Orders of Emergence," *Tradition and Discovery* XXIX (2002-03), n. 3, 35.

[7] See. e.g., Michael Polanyi, *The Tacit Dimension* (New York: Doubleday, 1967), p. 33: "It seems plausible then to assume in all other instances of tacit knowing the correspondence between the structure of comprehension and the structure of the comprehensive entity which is its object. And we would expect then to find the structure of tacit knowing duplicated in the principles which account for the stability and effectiveness of all real comprehensive entities."

[8] See, e.g., Alfred North Whitehead, *Process and Reality: An Essay in Cosmology*, Corrected Edition, eds. David Ray Griffin and Donald W. Sherburne (New York: Free Press, 1978), pp. 34-35.

[9] See, e.g., Joseph A. Bracken, *Society and Spirit: A Trinitarian Cosmology* (Cranbury, NJ: Associated University Presses, 1991), pp. 39-56; *The Divine Matrix: Creativity as Link Between East and West* (Maryknoll, NY: Orbis, 1995), pp. 52-69; *The One in the Many: A Contemporary Reconstruction of the God-World Relationship* (Grand Rapids, MI: Eerdmans, 2001), pp. 131-55.

[10] Whitehead, *Process and Reality*, p. 35.

[11] *Ibid*., p. 18.

[12] Whitehead, *Process and Reality*, p. 339.

[13] *Ibid*., pp. 99-100.

[14] *Ibid*., p. 100: "the growth of a complex structured society exemplifies the general purpose pervading nature."

[15] Polanyi, *The Tacit Dimension*, p. 10.

[16] Whitehead, *Process and Reality*, p. 21.

[17] *Ibid*., p. 28.

[18] Polanyi, *The Tacit Dimension*, pp. 11-13.

[19] Polanyi, *Personal Knowledge*, p. 344.

[20] Whitehead, *Process and Realilty*, pp. 25-26.

[21] *Ibid*., p. 214.

[22] Polanyi, *Personal Knowledge*, p. 360.

[23] *Ibid*., p. 363.

[24] Whitehead, *Process and Reality*, pp. 34-35.

[25] Rupert Sheldrake, *A New Science of Life: The Hypothesis of Formative Causation* (Los Angeles: J. P. Tarcher, 1981), p. 72.

[26] *Ibid.*

[27] Whitehead, *Process and Reality*, p. 18.

[28] *Ibid*., pp. 19, 85-86.

[29] Sheldrake, *A New Science of Life*, p. 76.

[30] Whitehead, *Process and Reality*,pp. 99-100.

[31] *Ibid*., pp. 101-02. See also Bracken, *Society and Spirit*, pp. 74-88, where I discuss this same issue in the context of "dissipative structures" as analyzed by Ilya Prigogine and Isabelle Stengers in their book *Order out of Chaos: Man's New Dialogue with Nature* (New York: Bantam Books, 1984).

[32] Sheldrake, *A New Science of Life*, p. 93.

[33] *Ibid*., pp. 200-07.

[34] Whitehead, *Process and Reality*, pp. 244-45, 342-51.

[35] Polanyi, *Personal Knowledge*, pp. 403-04.

[36] *Ibid*., p. 405.

[37] Whitehead, *Process and Reality*, pp. 349-51.

[38] See Bracken, *Society and Spirit*, pp. 140-60; *The Divine Matrix*, pp. 52-69; *The One in the Many*, pp. 109-55.

[39] See Bracken, *The One in the Many*, pp. 157-78.

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Comments on Joseph A. Bracken's "Emergent Monism and Final Causality: A Field-Oriented Approach"

Richard W. Moodey

ABSTRACT Key Words: Morphogenesis, field, event, occasion, society, emergence, finality, metaphor, Whitehead, Polanyi.

Bracken synthesizes Polanyi's notion of morphogentic field and Whitehead's notion of societies of actual occasions. These comments emphasize the implications of the metaphors involved in these notions. The metaphor of plants growing in a field lies beyond the concept of a morphogenetic field, and the metaphor of a society of interacting persons lies behind the concept of a society of actual occasions. I suggest that one of the implications of this metaphor is that there is not, as Bracken argues, a problem of continuity in Whitehead's metaphysics of events.

Father Bracken presents his paper as a synthesis — "a conscious hybrid" — "not fully consistent with either Polanyi's or Whitehead's metaphysical system." The new position he creates seems to me to give us excellent intellectual tools for thinking about emergence. He argues for thinking of Whitehead's actual occasions as events that take place in morphogenetic fields. This is an interesting notion that does not depend for its validity upon its faithfulness to the thought of either Polanyi or Whitehead. I have two groups of responses. The first consists of some reflections on morphogenetic fields, the second of reflections on Whitehead's notion of societies of actual occasions.

At Play in the Morphogenetic Field

A *literal* field is spatial, a bounded area of land, often fenced-in. Inside the boundaries or fence, plants grow, animals graze, or people play. A *morphogenetic field* is not literally spatial, but a metaphorical *conceptual* space. Because of the meaning of the Greek word *genesis*, I imagine these primarily as *growing fields*, only secondarily as *playing fields*. Forms, rather than plants, grow in morphogentic fields. Both growing fields and playing fields have intrinsic characteristics, as well as boundaries. These constrain and facilitate patterns of growth as well as patterns of play. For example, football fields and baseball fields constrain and facilitate different patterns of play.

Bracken argues that morphogenetic fields are common features in two processes of emergence: the emergence of new ideas and the emergence of new life forms. He asks: "if heuristic fields are clearly operative within the human mind seeking understanding of the world around it, why should there not be morphogenetic fields likewise operative within Nature?" Part of this isomorphism between the process of knowing and the process of becoming in the natural world is that both processes take place in morphogenetic fields.

Bracken quotes a sentence from Walter Gulick's criticism of this notion. Gulick argues that contemporary complexity theory "shows how emergent, stable patterns may spontaneously develop in large,

multi-faceted systems; the existence of mysterious preexisting principles need not be postulated." It seems to me that Gulick affirms the notion of morphogenetic fields, but gives them another name. The name Gulick uses is "multi-faceted systems." He presents "contemporary complexity theory" as representing "emergent, stable patterns" (forms) "developing spontaneously" (growing) *in* "multi-faceted systems" (morphogenetic fields). The operative word here is so small as to be easily overlooked – *in.* By saying that these stable patterns or forms develop *in* systems, Gulick is using the same kind of container metaphor as Polanyi and Bracken do by when they represent forms growing *in* fields. As containers in which emergent patterns or forms grow, multi-faceted systems have to be imagined as embodying "preexisting principles," whether "mysterious" or not. Otherwise they would not be systems.

I have some reservations about Sheldrake's conception of morphogenetic fields. Bracken appears to approve of Sheldrake's characterization of morphogenetic fields as *spatial* structures. I say "appears," because shortly after he quotes Sheldrake, he says that a morphogenetic field "can only be prehended conceptually as a pattern or structure of existence and activity." I disagree that morphogenetic fields are "spatial structures," arguing that they are non-spatial concepts, only metaphorically "spatial." I also have reservations about Sheldrake's "morphogenetic germs." These cause the field itself to develop. I imagine the field as the place in which forms grow, not as that which grows.

Bracken worries that the ghost of Aristotelian final causality haunts Sheldrake's – and even Polanyi's – conception of morphogenetic fields. I have to confess that I find this ghost to be more like Casper, the friendly ghost, than some evil demon that must be exorcised from every reasonable discussion. The would-be exorcists fall into one or both of two categories. One consists of those who want God to be dead, or if not dead, impotent. They do not want any divine intentions messing up the natural order of things. The other category might be an endangered species. It consists of those who, like Ivan Pavlov and B.F. Skinner, want to outlaw all kinds of "mentalistic" language. They ridicule any talk of intentions, whether human or divine. Neither Polanyi nor Whitehead will ever be popular with either category of frustrated exorcists. They both write about mental states without the slightest hint of guilt or shame, and they both write about God. Nor will Bracken's hybrid synthesis satisfy them, because he also uses the language of thought and intention, and writes about a Trinitarian God who can make things happen. I don't think this should worry him. Those of us who are interested in exploring the mysteries of God and the human mind have no need or desire to get rid of final causality, even though we might not try to explain quite as much with it as Aristotle did.

The Non-Problem of Continuity in Whitehead's Societies

Bracken argues that Whitehead's notion of persons and things as societies of actual occasions generates a problem of continuity between successive sets of actual occasions. He writes:

> My argument has been that Whiteheadian societies, since they for the most part correspond to the relatively stable persons and things of common sense experience, must be more than just aggregates of analogously constituted actual occasions. For, as such, these aggregates would come into and go out of existence as rapidly as their constituent actual occasions, and no metaphysical ground for their ongoing existence and activity would be guaranteed.

I think Bracken is mistaken in seeing a problem of continuity in Whitehead's characterization of people and

things as societies of actual occasions. I think the source of this mistake is a failure to recognize just how far Whitehead is willing to take his metaphor.

There is what Douglas Hofstadter calls a *strange loop* in Whitehead's metaphor. Not only does Whitehead imagine people as societies of actual occasions; he also imagines actual occasions as people. This is built into his metaphor: the members of literal societies are people; the members of Whitehead's metaphorical societies are actual occasions; actual occasions are metaphorical people.

There are many passages in Bracken's paper in which he reports on or elaborates upon Whitehead's attribution of characteristics of persons to actual occasions. I have selected the following from a much longer list:

- Actual occasions *constitute themselves* and are *subjects*—"momentary self-constituting subjects of experience."
- They can *succeed or fail*—"ultimate components of inanimate things, namely, momentary self-constituting subjects of experience, can be evaluated in terms of success or failure in maintaining a balance between order and novelty proper to their own niche and function within the overall cosmic process."
- They *grasp the past* and *make decisions*—"a Whiteheadian actual occasion prehends innumerable past actual occasions and integrates them into the unity of its own self-constitution in virtue of an immanent 'decision.'"
- They *distinguish* between self and society—"even as the occasion intuitively recognizes that this same common element of form for the society as a whole is somehow distinct from itself and its own individualized pattern of self-constitution."
- They *interact*—"only by their interrelated activity vis-a-vis one another do they achieve a "common element of form" and become a society instead of a purely coincidental aggregate of actual occasions which could dissolve in the next moment."
- They form themselves into *complex societies*, made up of *subsocieties*—" what Whitehead meant by 'structured societies,' that is, more complex societies composed of subsocieties of actual occasions."
- They are *free*—"as self-constituting subjects of experience, these other actual occasions are 'free' to incorporate the new pattern of existence and activity into their own process of concrescence."
- They receive *Divine revelations*—"Divine initial aims according to Whitehead are derived from the ongoing integration of the primordial and consequent natures within God and are communicated to individual actual occasions so as to guide their individual processes of concrescence."

In spite of all of these statements in which he recognizes the person-like attributes of actual occasions, Bracken holds that there is a problem of continuity in Whitehead's conception of societies of actual occasions. I contend that actual occasions themselves provide the metaphysical ground for continuity. Just like persons, in their present activity, they pull together the past and the future.

A paragraph from *Science and the Modern World* (1941 [1925]: 106-7) illustrates this time-binding capacity of an actual occasion, which Whitehead here refers to as an *event* :

> An event has contemporaries. This means that an event mirrors within itself the modes of its contemporaries as a display of immediate achievement. An event has a past. This means that an event mirrors within itself the modes of its predecessors, as memories which are fused into its own content. An event has a future. This means that an event mirrors within itself such aspects as the future throws back on to the present, or, in other words, as the present has determined concerning the future. Thus an event has anticipation:

‘The prophetic soul
Of the wide world dreaming on things to come.’

These conclusions are essential for any form of realism. For there is in the world for our cognisance, memory of the past, immediacy of realisation, and indication of things to come.

Whitehead emphasizes that actual occasions have pasts and futures as well as contemporaries. They incorporate their pasts as memories and their futures as anticipations. In saying this, Whitehead is simply working out the implications of his metaphor. Does Bracken see a problem of continuity in Whitehead’s notion of societies of actual occasions because, in spite of all of the passages I quoted, he imagines actual occasions as having only contemporaries? Or, is it because he does not believe that the memories and anticipations of actual occasions provide an adequate metaphysical ground for continuity between successive societies of actual occasions?

Regardless of how Bracken answers those questions, his argument for thinking of actual occasions as events that take place in morphogenetic fields does not rest entirely upon there being a problem of continuity in the way Whitehead describes societies of actual occasions. I regard the position Bracken takes as a new one. He has used the thought of Polanyi and Whitehead as points of departure into new and different territory. I believe the journey he is taking is, and will continue to be, fruitful.

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On Structured Societies and Morphogenetic Fields: A Response to Joseph Bracken

Walter B. Gulick

ABSTRACT Key Words: Michael Polanyi, Joseph Bracken, Whitehead, cosmology, morphogenesis, field theory, evolution, operational principles**.**

Joseph Bracken proposes to modify Whitehead's tendency to see the comprehensive entities of everyday life as but aggregations of actual occasions. While there are resources in Polanyi's notion of an emergent cosmos to counter Whitehead's atomism and reductionism, Bracken's use of Polanyi's theory of a morphogenetic field as a corrective is argued to be only partially successful. Bracken must explain how morphogenetic fields evolve and arise. This step would require (1) replacing Whiteheadian reductionism with a principle of ontological parity that honors the reality of interaction between entities and the integration of their operational principles within basic ontological levels and (2) setting forth principles of emergence to explain how these levels and fields arise.

Joseph Bracken offers Polanyians a rare treat: a work of constructive philosophical cosmology that synthesizes ideas from Michael Polanyi and Alfred North Whitehead. His thoughtful essay can be seen as a sustained reflection on the metaphysics of process, structure, and emergence. Before embarking on the critical analysis expected of a respondent, I want to thank Father Bracken for the discriminating, imaginative, and inspiring work manifest in his essay. It models the sort of creative, constructive work that best honors and keeps viable the thought of both Polanyi and Whitehead.

While I can applaud what Bracken accomplishes in his essay, I cannot affirm the specifics of the vision he sets before us. My problems are not so much with Bracken as with the Whiteheadian framework within which he works. I'll initially focus my comments on the relationship between the thoughts of Polanyi and Whitehead before turning later to Bracken's specific proposals. I'll try to explain why the deficiencies I see in process philosophy are not eliminated by the sort of Polanyian therapy Bracken advocates.

Several brief autobiographical comments may help illuminate why I find Whitehead's cosmology problematic. My one and only class in Whitehead's thought was taught by John Cobb, a man I greatly admire as a person and as a thinker. I found much in Whitehead's creative interpretation of the philosophical tradition to be exhilarating, and I appreciated the richness of his thought in contrast to the aridity of the analytic tradition. However, I could not easily connect his cosmology to the world I experience, whereas in reading Polanyi I felt at home. The philosophies of Whitehead and Polanyi reveal more than a trace of their disciplinary backgrounds: the mathematician and logician in contrast to the physician, chemist, and economist. I find the weight of reality to reside in the latter rather than the former orientation.

There are a number of respects in which Whitehead's and Polanyi's thought are in harmony, and Bracken both comments on and relies upon some of them. For instance, Whitehead's insistence that human experience is rooted in embodied, pre-intellectual activities culminating in consciousness (*Process and Reality*

246-247) parallels Polanyi's description of how passions, skills, and indwelt frameworks of interpretation contribute to personal knowledge. Whitehead sees perceptional experience as based upon an integration of presentational immediacy (the extended world of sense data) with casual efficacy (the mode of feeling-laden inheritance from the past — see *PR* 256). Causal efficacy can be correlated with Polanyian tacit knowing, or at least with one dimension of tacit knowing. The integration of presentational immediacy and causal efficacy occurs in the mixed mode of symbolic reference (*PR* 185, 255), a notion that brings to mind Polanyi's explanation (*PK* 71-82) of how articulation builds upon a background of trick, sign, and latent learning, which are additional dimensions of the tacit realm. Whitehead's analysis of the vectorial qualities of prehension and concrescence (*PR* 28) correlates nicely with Polanyi's from-to structure of consciousness. For both Whitehead and Polanyi the culminating experience of satisfaction – of initial aims (*PR* 29, 448), of intellectual passions (*PK* 174) – is crucial. And, as has already been suggested, the process of integration is essential to the philosophical vision of each.

The similarity between the thinkers is evident when they discuss the dynamics of thought. But what distinguishes Whitehead most dramatically from Polanyi is the metaphysical underpinning of his thought. They differ dramatically with respect to what is ontologically ultimate. Whitehead claims each atom of concrescence is ultimate, whereas Polanyi defers to an open-ended inquiry into the real, understood as that which has the power to manifest itself in the future. In other words, Polanyi centers his philosophy in the person seeking knowledge, while Whitehead projects subjectivity into the smallest components of reality, actual occasions. In subscribing to what he calls the reformed subjectivist principle (*PR* 252), Whitehead flirts with an anthropocentric presumption. What is the basis for thinking that all reality works much like the way human experience arises? Does such an assumption not obscure the countless ways human consciousness is not like electrons, metal girders, pine trees, or quasars? Doesn't Whitehead's metaphysics clash so essentially with Polanyi's anti-reductionist vision that inserting Polanyian ideas into the Whiteheadian framework is like trying to mix oil and water?

Whitehead bases his thought on a metaphysical construal of the philosophical tradition, while Polanyi takes the act of scientific discovery as paradigmatic for his epistemology and by extension his ontology. Whitehead moves from thought to reality; his cosmological vision is modeled on an axiomatic system. "The true method of philosophical construction is to frame a scheme of ideas, the best that one can, and unflinchingly to explore the interpretation of experience in terms of that scheme" (*PR* x). Polanyi, in contrast, emphasizes that knowledge is grounded in undefinable powers of thought and unproven traditional beliefs. "No rules can account for the way a good idea is produced for starting an enquiry; and there are no rules either for the verification or the refutation of a proposed solution of a problem" (*PK* ix). From the beginning of inquiry, thought and evidence are in dialectical tension.

Polanyi's entry to philosophy appeals to me because I feel I can relate his claims to my own experience and to a scientific understanding of the world, whereas I have little or no basis for assessing the adequacy of Whiteheadian metaphysics. How does one relate an actual entity to a quark? to a radioactive uranium atom in decay? to space? to antimatter? to a gene? to a dream? to the heart's functioning? This abbreviated list may suggest the difficulties that attend any attempt to connect Whiteheadian cosmology to our actual world. I must acknowledge that Whitehead and especially some of his followers (including Bracken) have built some plausible bridges from the world of actual entities to our everyday world and even – though less successfully, I think – to the micro- and macroscopic worlds. But the need continually to provide such mappings, and the fact that in order to encompass the latest finding of science and other domains of human inquiry the

Whiteheadian vision must constantly be revised to fit these findings, indicates forcefully the ontological priority of these domains and their findings.

We have seen that in the scheme of ideas Whitehead frames, concrescing actual entities are his ontological ultimates (*PR* 321-323). Whitehead's cosmology is reductive and atomistic in nature (*PR* 53), as Bracken notes. All that is actual in a scientific or everyday view – atoms, rocks, human consciousness – is to be understood as an assemblage of actual entities, spread out in space-time as structured societies or strung together serially as enduring objects, of which a person is a prime example. Actual entities in their togetherness are called nexûs, but Whitehead's notion of collectivity does not go much beyond aggregation. He claims that "there is no emergent evolution concerned with a multiplicity, so that every statement about a multiplicity is a disjunctive statement about its individual members" (*PR* 45). It is entirely understandable that Bracken, thinking about the relatively stable things of common sense experience, and recognizing they "must be more than just aggregates of analogously constituted actual occasions" (p. 3), would turn to Polanyi's thought for assistance.

In agreement with Polanyi, Bracken states that "the whole is always more than (and to some extent other than) the sum of its functioning parts, an insight which seemed to elude Whitehead in his analysis of actual occasions and the societies into which they aggregate" (Bracken, p. 5). Polanyi understands that things in the universe exist in a vast range of scales, exhibit distinct operational principles, and are related in hierachically arranged levels. How can the experienced stabilities of this vision be integrated into a Whiteheadian metaphysics?

Bracken turns to Part IV of *Personal Knowledge* for assistance. Here Polanyi discusses evolution and makes use of fields to consolidate his points. Bracken selects Polanyi's idea of a morphogenetic field as providing the best vehicle for incorporating Polanyi's holism. There is a price to be paid for this inclusion. Polanyi understands the related ideas of ontogenetic, phylogenetic and morphogenetic fields as applying to living things, but in order to use the field notion within a Whiteheadian context, the field concept must be stretched to include the non-organic world. It must be integrated into the world of actual entities. Does such an extension make sense?

To answer this question, first it is important to become clear about what Polanyi claims in Part IV of *Personal Knowledge*, the locus of his discussion of fields. There he makes the following distinctions:

1. Polanyi describes *operational principles* that follow rules of rightness. They come in two basic forms:
    a) A machine or biological component (e.g., an organ) has one or more operational principles that describe its function(s).
    b) A living being has a center that coordinates the various functions according to what Polanyi calls "regulation" (*PK* 342). Presumably a center integrates an organism's internal drives and functions (sustaining conditions) with its responses to environmental conditions (random impacts) according to a relatively inclusive set of operational principles (*PK* 401).

2. Polanyi describes processes of change in the organic realm as guided by *fields* within which centers or organizers typically operate (*PK* 357). Individuals' growth is guided by *ontogenetic fields*; species

participate in *phylogenetic fields* that tend to evolve. Each field includes processes of *morphogenesis*.

3. The origin of life itself as well as the process of evolution is dependent upon an *ordering principle*. "The *ordering principle* which *originated* life is the *potentiality* of a stable open system" (*PK* 383-384).

Relying on these concepts, Polanyi challenges the neo-Darwinian synthesis, claiming it cannot show how new species, having operational principles discontinuous from their ancestors, could arise. Contemporary theorists of evolution use such notions as genetic drift in isolated environmental niches to answer Polanyi's challenge without reverting to teleological concepts. Polanyi's answer, however, has a finalistic dimension, and in this respect his thought is compatible with Whitehead's view that each actual entity has a purpose (*PR* 165). That is, by making use of Part IV, Bracken may be mixing rare Polanyian oil with ordinary Whiteheadian oil.

Be that as it may, Polanyi's ordering principle, useful enough as an indicator of systemic stability, seems unable to solve the conundrum central to his challenge to the neo-Darwinian synthesis. How does the *potentiality* of stability originate anything? Some force or process is required to initiate something. Yet there is an intriguing way to interpret Polanyi's notion of an ordering principle, and that is to see it as a precursor of the cosmological notion of self-organizing systems, which after all do eventuate in stable open systems (*PK* 384). That is, Polanyi can be seen as groping his way toward complexity theory and its role within a universe of emergent novelty.

Hints of causal purposefulness infiltrate Polanyi's discussion of fields. The paradigmatic notion of a field in physics refers to the array of forces surrounding a magnetic or charged object. The field has the power of aligning other neighboring charged particles in a certain direction. The field thus has a causal impact on certain types of objects. Polanyi uses this concept analogously to describe his experiences of feeling a gradient of approaching scientific discovery. It is as if there is a collection of clues (the field) that leads the inquirer (the aligned object) to discovery. But is it the environment alone that leads to discovery, or is it the investigator's own repertoire of associations, skills, and integrating insight that produces the new knowledge? Surely what Polanyi terms a heuristic field requires the involvement of both the seeker and the environment explored. The heuristic field also includes a standard of achievement: success in discovering what is real.

> The assumption of a heuristic field explains now how it is possible that we acquire knowledge and believe that we can hold it, though we can do this only on evidence which cannot justify these acts by any acceptable strict rules. It suggests that we may do so because an innate affinity for making contact with reality moves our thoughts – under the guidance of useful clues and plausible rules – to increase ever further our hold on reality. (*PK* 403)

A center's innate ability, environmental clues, plausible rules, and a standard of achievement are each necessary for there to be a heuristic field.

Bracken relies on Polanyi's notion of a morphogenetic field to supply the structure, stability, and continuity he feels (correctly, I think) is lacking in Whitehead's cosmology. What is a morphogenetic field? It has some of the characteristics of a heuristic field.

Comprehension and the somatic process which accompanies comprehension, represent

> therefore a kind of equilibration that can be defined only in terms of *intellectual rightness*. Morphogenesis, operating under the direction of a morphogenetic field, is a somatic process of the same kind, but following morphogenetic rightness as its standard of achievement. . .. Our sense of approaching the unknown solution of a problem, and the urge to pursue it, are manifestly responses to a gradient of potential achievement; and when we identify a morphogenetic field, we see in it in fact a set of events co-ordinated by a common gradient of achievement. (*PK* 398)

Embryonic development and the growth of somatic forms in general (the ontogenesis of an individual) are examples of morphogenesis.

To be consistent with Polanyi's discussion of heuristic fields, a morphogenetic field should include a) an innate ability of a living center to follow a plan of development (which today would be described as genetic expression within a gene cycle), b) environmental clues as to when gene expression is appropriate, c) consistency with the center's operational principles, and d) a standard of mature development that is the target of the field. Each individual would be seen to have an ontogenetic program of morphogenesis, but more controversially Polanyi also suggests that the morphogenetic plan of a whole species exists within a phylogenetic field. Just as within a heuristic field a person is understood to be a center capable of discovering what is real, so Polanyi attributes to a phylogenetic field a center that presumably has the ability to aid the species in reaching a new level of systemic stability (*PK* 405). What can Polanyi mean by attributing a center to a whole species? An individual can be seen to have a center of decision making, but a species?

An even more daunting set of questions must now be directed to Bracken. He claims that "a morphogenetic field would possess an immanent principle for the organization of its material components at any given moment" (p. 4). Where is this principle centered? If it is in the actual entities, he has essentially reverted to Whitehead's view concerning common elements of form, and the morphogenetic field is inconsequential. If there is a center to the field, and it has its own operational principles, then Bracken has a much larger task on his hands than is indicted in his essay. He must explain how morphogenetic fields arise, how they are related to actual entities, how they evolve, and how they are superceded.

On page 10 of his essay, Bracken begins to clarify his position.

> What I have maintained over against Whitehead is that this common element of form has somehow to stay in existence as the principle of continuity between successive sets of actual occasions. In my judgment, as noted above, it stays in existence as a structured field of activity for those same sets of actual occasions, dependent for its form or structure on the current set of occasions and yet serving as the "ordering principle," in Polanyi's terms, for the next set of occasions. As such, it is a morphogenetic field, giving a Gestalt or recognizable shape and pattern of activity to its current members but itself in slow process of evolution toward a goal yet to be realized in its fullness. For, the field is always open to a new pattern to be achieved by future sets of actual occasions even as it provides a direction for the achievement of that goal here and now by its present mode of existence and activity.

There are a number of loose ends to be noted in this passage. How can the common element of form Bracken wants to maintain also serve as a Polanyian ordering principle, which Polanyi understands as the

potentiality of a stable open system? Can this common ordering element of form simultaneously be a morphogenetic field, as Bracken claims? Does a water molecule, which possesses a common element of form from moment to moment, exist as a morphogenetic field? Or is the morphogenetic field to be attributed to a collection of water molecules, as in a cloud or a river? Or is the whole environment to be seen as a morphogenetic field?

Bracken makes some progress toward answering these sorts of questions by replacing Whitehead's "structured societies" with hierarchically ordered fields having different degrees of independence (p. 12), and here I think he has turned to an aspect of Polanyi's thought that is truly promising. Polanyi understands different sorts of entities to have different operational principles. He also understands the biological realm to be ontologically emergent from the realm of physics and chemistry (*PK* 394), and thereby organic life is seen as existing as a higher level dependent upon but irreducible to the lower material level. This view is clearly inconsistent with Whitehead's panpsychism, and it presents Bracken with some fundamental decisions. In opposition to Whitehead's reductionism, I would challenge Bracken to consider adopting Justus Buchler's principle of ontological parity, which accords equal reality to all ontological levels and doesn't require the constant and perplexing recursion to the "decisions" of actual entities to explain anything. Change sometimes requires top-down explanation, sometimes bottom-up explanation, and sometimes explanation at a given level of existence. Bracken recognizes this (p. 5) but also is conscious that this sometimes challenges Whitehead's "ontological principle" that requires all explanations to refer to actual entities *(PR* 28; p. 11). He is especially interested in exploring the role that "divine initial aims" (referring to God as the ultimate actual entity) might play in explanation (p. 14). Moreover, by insisting that fields not be seen as exercising efficient causality (p. 11), Bracken seems to escape Polanyi's questionable attribution of some sort of agency to phylogenetic fields. In sum, I applaud Bracken's attempt, still in progress, to recognize and illuminate the important place in cosmology of structure, which too often tends to be dismissed or overlooked in process thought.

References

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WWW Polanyi Resources

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The Importance of Michael Oakeshott for Polanyian Studies: With Reflections on Oakeshott's *The Voice of Liberal Learning*

Walter B. Mead

ABSTRACT Key Words: Polanyi, Oakeshott, liberal education, epistemology, boundaries, curriculum, values.
Despite fundamental differences in the epistemologies presented by Oakeshott and Polanyi, there are some important areas of common concern which suggest further exploration. Focus here is on Oakeshott's epistemological and disciplinary boundaries in his The Voice of Liberal Learning.

Those of us who are interested in building upon and applying Michael Polanyi's profound epistemological insights naturally find ourselves seeking dialogue with those who are, if not directly influenced by Polanyi, at least engaged in thinking that is essentially consonant with his. It is easy to be dismissive of those who appear to have no regard for such fundamental Polanyian tenets as the elusively tacit grounding of knowing, the important role played by the intimation of indeterminate manifestations in the discovery process, the personal, or fiduciary, act central to all knowledge claims, the sense that we inhabit a heuristic universe whose boundaries are ever open to the guidance of transcending truths and values, and, not least, the humble recognition that we cannot, in this world, aspire to comprehension characterized by complete clarity, let alone certainty – that all human knowing is subject to error.

Michael Oakeshott is such a case in point. He unabashedly embraces an essentially Enlightenment type of rationalism, aspires to a kind of Hegelian perspective that would allow for a totally comprehensive, clear, and certain understanding of the entire "world of experience," offers an understanding of values as essentially relative — the circumstantial "prejudices" of tradition, denies any meaning to the concept of "transcendence," and advances an essentially Hobbesian/Humean perspective that human motivation is explainable in terms no loftier than the pursuit of "desire," "delight," and "satisfaction."

This stark contrast between Polanyi and Oakeshott, contemporary thinkers who, during two of their most productive decades, lived within an hour's drive of each other, probably goes a long way in explaining why neither appeared to be particularly interested in the other's thoughts. There is no indication in any of Polanyi's writings that he was even conversant with Oakeshott's thinking. However, at the time that Polanyi was writing his seminal work, *Personal Knowledge* (1958),[1] it appears that very few others had shown interest in Oakeshott's major philosophical work, *Experience and Its Modes*.[2] Since its publication in 1933, its first printing of one thousand copies had not yet sold out. And although Oakeshott provided a review of *Personal Knowledge* immediately upon its release and a few years later briefly incorporated some of Polanyi's characteristic terminology in one of the essays included in the book we are about to consider, *The Voice of Liberal Learning*,[3] he displayed no more – either deep or extended – appreciation of Polanyi's sense of these terms than he, by his own admission, had for *Personal Knowledge*, which he found to be "disordered, digressive, repetitive, and obscure."[4]

Still, there is one important area in which the, otherwise divergent, epistemologies of these two thinkers coincide. Both perceive the process of knowing as essentially contextual – an act in which the knower, in his attempt to achieve a more determinate and coherent awareness, is continually engaged in making judgments, drawing conclusions, based upon an indeterminate range of experiences. Oakeshott, in one of the essays included in *Liberal Learning*,[5] occasionally even seems to agree with Polanyi that many of these contributive experiences are of a "subsidiary" and "tacit" nature. Although these are Polanyi's terms, not employed by Oakeshott, the latter uses other words and phrases – e.g., "not explicit," "indeterminate" – to suggest similar meanings. And the judging/comprehending process itself, Oakeshott – like Polanyi – reminds us, is not always "defined by rules"; it occasionally relies upon "connoisseurship" – a "knowing how . . . without knowing the rules"; some things are "known only in practice"; and he even suggests that learning is "inspired by intimations of what there is to learn."[6]

But we must not read too much into Oakeshott's employment of these "Polanyian" terms. The larger body of his essays and books indicate that his fundamental stance, ever since the publication of *Experience*, remains rooted in an understanding of knowing that never really moves beyond a commitment to the definitional precision, explicit clarity, complete coherence, and absolute certainty aspired to – and often claimed – by Enlightenment rationalism. The thought that, in his reference to "intimations," (above) Oakeshott may have attained the imaginative and intuitive "reach" implied in Polanyi's use of the term disperses when we hear him say, "We never look *away from* a given world to another world, but always *at* a given world to discover the unity it implies."[7] For Oakeshott, whatever "indeterminate" and "unspecified" elements he ascribes to the judgments entailed in knowing, the degree to which we can properly call something "true" or "real" must be measured by his essentially critical criteria. It is relevant to note here that, even though he, on rare occasions, uses the term "unspecified" to describe some of the contextual elements of our knowing, he *never*, to my knowledge, characterizes these elements as "unspecifiable." To acknowledge any knowing as unspecifiable, because ultimately tacit in nature, for Oakeshott, is to make an unwarranted concession to irrationality and ignorance. By way of contrast, Polanyi articulates his *post*-critical declaration that it is this very tacit and often unspecifiable grounding, and our recognition of this grounding, that gives our knowing, even our most explicit knowing, whatever rational validity and substantiality it can claim.

However, it is not without significance that both philosophers are in agreement and consistent in their insistence on the essentially contextual nature of knowing. Polanyi and Oakeshott concur that comprehension involves some kind of an act of bringing together an indeterminate range of particulars into coherent and integrated wholes. Further, both make reference to some kind of boundaries that give definition to these wholes. Having observed this, we must recognize that these thinkers sharply diverge when they reveal the characteristics of their respective integrated wholes and the nature of the boundaries that demarcate these wholes.

For Polanyi, an integrated whole is any focal perception, concept, idea, system of ideas, or even – moving from epistemology to ontology, as he does in his philosophical writings – complex mechanical or living entity that is an "organic" result of subsidiary, and largely tacitly organized, particulars. When Polanyi comes to speak of boundaries, it is almost entirely in regard to his ontological theory of hierarchical levels and emergence. Although his ontology of hierarchy and emergence appears to have been inspired by his initial employment of these concepts in his epistemology (according to which the focal object of our perception and knowing emerge from a tacit process of integrating particulars into wholes that are greater, or more meaningful, than the sheer sum of their constituent particulars), he only briefly applies the concept of "boundary" to his understanding of the structure and process of knowing.[8]

This is not to suggest that the idea of boundaries is not *implied* in his epistemology. In his consideration of visual perception, he speaks of a "from-to" dialectic between the periphery of the visual field and its focal center, and he detects an analogous "from-to" dialectic between subsidiary and focal awareness in all knowing. Where there is a periphery, there is an implied boundary, whether tacit or explicit. Similarly, recognition of an integrated whole, emergent from the "from-to" dialectic of cognitive integration, implies a boundary.

Still, Polanyi gives slight attention to the concept of boundaries in his extended discussion of the structure and process of knowing. In contrast, for Oakeshott, the subject of the nature and function of epistemological boundaries is of major concern and receives extended treatment in his writings. Even though the integrated wholes of which Oakeshott speaks refer mostly to *whole systems* of ideas (indeed, completely isolated "particular ideas . . . without relations must be devoid of significance and consequently fall outside *experience*"[9]) and are – as we have already noted – the product of a significantly different process of integration, his insightful and imaginative investigation of epistemological boundaries, and many of the questions he raises in the course of this investigation, suggest some interesting lines of inquiry that might be fruitfully pursued by those interested in building upon the ultimately more persuasive epistemological paradigm initiated by Polanyi.

Oakeshott establishes the fundamental principles of his concept of epistemological boundaries in his *Experience*. This important philosophical work, because of its enormous scope and abstraction, is daunting but richly rewarding reading. To adequately understand the philosophical rationale for his much later examination of the principles of liberal education, elaborated in the six essays comprising his very readable *Liberal Learning*, it is important to have struggled first with *Experience*. The value of the later work is that it gives "flesh" to his highly abstract theory of knowing and, at the same time, identifies what the author considers to be major failures in twentieth-century higher education while also presenting constructive proposals for remedying those failures. His proposals do not suggest simply a return to what one might call the "classical" idea of liberal education but, in many respects, a radical re-examination of how liberal education ought to be conceived. Some of his proposals have drawn sharp criticism from those committed to the classical model. But whether or not one ends up agreeing with these proposals, they, like his underlying theory, offer important, commonly neglected questions that need to be addressed.

Oakeshott's understanding of the issues to be dealt with in coming to an appreciation of the learning/knowing process did not start in abstract theory. It is rooted in his lifetime of experiences in education as both student and teacher. In this sense, the very tangible observations we encounter in *Liberal Learning* are logically anterior to the grand abstractions of his much earlier *Experience*. Liberal learning, he suggests, is learning to participate in "the great intellectual adventures in which human beings have come to display their various understandings of the world and of themselves."[10] He then proposes that at the heart of liberal education at the university level is *conversation*. Indeed, he suggests that higher education importantly ought to provide an *interval* in a person's life that allows him or her to be temporarily removed from the narrow pressures of society that call for immediate and "gainful" results, a space wherein one – through conversation – can be encouraged to ask questions, to examine prior assumptions, and to think thoughts never previously dreamed of. It is the conversation among students, among professors, but most importantly between students and professors (Oakeshott dismisses Rousseau's plan for leaving the student to draw largely on his/her own "innate" resources) that gives substance to liberal education.

However, a conversation can be substantively productive only if its boundaries are properly – neither too narrowly, nor too broadly – drawn. This naturally leads Oakeshott to consider curricular and disciplinary boundaries. Experience has amply demonstrated the dangers of an overly narrow focus. Teaching what has been described as "more and more about less and less" leads not only to irrelevance and superficiality but also to serious distortions in what is learned. While recognizing the importance of offering some vocational training in the university curriculum, Oakeshott warns that allowing vocationalism, or even non-vocationally-oriented specialization, to dominate a curriculum or a given field of study is destructive of liberal education.

He warns, also, that the same dangers result from an overly broad drawing of these boundaries, as happens when university studies are defined in such vague and global terms as, for example, "History of Civilization" or "Thinking Logically" – so that curricula, emptied of the riches that can be conveyed only in concrete specifics, only provide the student with, we might say, "less and less about more and more." A well-defined field of learning appears to be one whose boundaries are drawn narrowly enough to permit coherence in the teaching/learning conversation and broadly enough to be comprehensive of all that might be relevant and, therefore, permit the greatest possible enrichment of that conversation.

Interestingly, Oakeshott's disciplinary boundaries coincide with those that he had drawn, in *Experience*, to define what he there called "modes of experience." A mode of experience, for him, is a "world of ideas" or a "universe of discourse" focused upon the pursuit of a particular goal. In both *Experience* and *Liberal Learning*, speaking specifically respectively about modes and fields of teaching/learning, he identifies four of these: "science," "history," "poetry" (in which he includes all the visual, audio, and dramatic arts), and "practice" (in which he includes politics, economics, sociology, and psychology), and he indicates that this listing is not exhaustive because there is actually an "indeterminate" number of modes or fields of inquiry.

The goal of science, he says, is to present an understanding of the world in terms that are objective, precise and quantifiable. The task of history is merely to report, with no attempt to make judgments or to advocate, the events of the past. What he calls "poetry," and I shall refer to as "the arts," has no purpose other than to "bring delight." And practice is an attempt to order the world so that our actions in it will maximize the satisfaction of our desires.

Because the objective perceived as most important for attainment by each field of learning structures all the tools that are deemed appropriate for attaining this objective, the concepts, idioms, universe of discourse, and conversation appropriate to each field are also, in each case, unique. This helps us to understand why, throughout the many decades that Oakeshott concerned himself with this subject, he uses the terms "mode," "idiom,""universe of discourse," "field of inquiry," "conversation," and – most common in his later writings on the subject, "voice" interchangeably.

This also may help us to understand one of the more criticized, but I think defendable, aspects of his philosophy of knowing and, consequently, his philosophy of liberal learning. Because each of these modes is so different in virtually all respects – goal, conceptual idiom, governing paradigm, area of relevant conversation, etc. – each mode is autonomous: there can be no relevance of one mode or field of inquiry for another, no meaningful conversation between them, no way that one can learn substantively from another. This is true by definition, since each mode was created to pursue its own goal by conceptual and other means that have proved uniquely successful to that pursuit. Indeed, to assume otherwise, to allow for a blurring of interdisciplinary boundaries by incorporating "insights" from other modal endeavors, can lead only to confusion, or worse –

error, and, still worse – the destruction of modal, or disciplinary, integrity and of liberal education itself. For example, in the twentieth century we have seen the inappropriate influence of the historical paradigm on politics lead to the corruption represented by "historicism," and the similarly inappropriate impact of the scientific idiom on social studies result in the "scientism" of behavioralism.

Where Polanyi speaks of open boundaries, Oakeshott speaks only of closed boundaries. This is not to suggest that new information is not constantly being appropriated by each mode, but it is generated internally; information generated within other modes is alien to its purposes and understanding. Still the content in each mode is constantly changing. Oakeshott's holistic (and Hegelian) understanding of a mode or a field of inquiry leads him to conclude that a change in any part entails a change in the whole, and a change in the whole gives new meaning to all of its parts. Consequently boundaries, properly understood, are constantly changing, but not overlapping.

Those who have criticized Oakeshott on this aspect of his epistemology and education for giving too narrow scope to intellectual conversation should be reminded that, especially when we consider "poetry" and "practice" as academic disciplines, the range of inquiries he includes within each of these is enormous – far more encompassing than most presently-defined academic disciplines. As regards science, he is suggesting that the most rewarding conversations here – as biochemists, astrophysicists, nuclear biologists, and most other scientists have discovered – far transcend most of the recent and even current definitions of the scientific disciplines: physics, chemistry, biology. Further, Oakeshott even, somewhat surprisingly, recommends that institutions of liberal learning encourage a more encompassing conversation that extends even beyond the fairly broad intra-disciplinary conversations we have just noted and that invites the participation of every member of the academic community. It appears that, even if the separate disciplines can have no substantive influence on each other, a liberally educated person is one who still is well aware of the conversations going on within the other disciplines. Having some conversance with other fields may not improve his performance in his own field, but it does give him a broader, and to that extent deeper, understanding of the world in which he lives.

The boundary that Oakeshott defines for history is, to my thinking, more problematic than those he provides for the other fields of learning – and even so for him. He wants politics, for example, to be informed by history (all of his "political writings" are immersed in historical observations) while still maintaining that it cannot be substantively relevant to politics since its idiom is totally alien to politics. Psychology (included, like politics, in "practice"), unlike history, can speak to politics because it shares a common idiom. My most generous interpretation of Oakeshott on this matter is that, while history cannot substantively contribute to politics, the "concrete detail" of history is there to caution the political thinker and actor of the complexity of the world, to give him a humble awareness that many forces other than political forces are at work both in shaping the problems he must address and in limiting how much influence he can have in determining his society's, or his own, destiny.

However, this is just one of several instances where one might wish that Oakeshott had been within earshot of Polanyi when the latter was warning of the problems we create for ourselves when driven by the quest for unbridled clarity and precision. He sometimes creates new categories to maintain the integrity of his boundaries. For example, he doesn't want to blur the boundary between philosophy and politics, but still sees the need for political philosophy – so he calls it a "pseudo-philosophy." Sometimes one gets the impression that the same ambitious intentions that give Oakeshott's epistemological project its imaginative richness also, because of their convergence with his unbridled faith in the reliability of Enlightenment rationality, leads him

to creating appendages to his overall structure not unlike the complex epicycles intended to maintain the structural integrity of the ancient Ptolemaic universe.

By operating within the context of a hierarchical ordering of his epistemological and ontological universe, Polanyi is able to allow for open boundaries in his system that permit the kind of communication ("marginal control") across boundaries that can account for the emergence of higher systems. Oakeshott, by contrast, firmly denies any hierarchical characteristics in his system – epistemological or curricular. It seems as if an acknowledgement of higher and lower levels of knowing or being, perhaps leading to an acknowledgement of transcendence (a concept he just as firmly dismisses as that of hierarchy), might threaten to put areas of knowing out of human reach. He perceives the relations among his various curricular fields, like the relations among his modes of experience, as essentially horizontal. He does – some would say, inconsistently – find it necessary to describe some fields, or universes of discourse, as more important than others. For example, he regards "practice" as the "most important" of the fields of inquiry – since it attempts to provide for human survival and well-being, without which the other pursuits were impossible. Sometimes he even describes one endeavor as of higher quality than another.

But, for him, "hierarchy" connotes more than relative quality and importance. It also connotes relevance of one level or entity to another. And his manner of drawing and defining boundaries does not allow, as we have seen, for such relevance, or for one field to be able to improve the chance for successful pursuit of its substantive goal by drawing substantively – that is, conceptually, idiomatically, paradigmatically, etc. – from another. It is the symbols, or idioms, of each field that define for that field what is real. "H_2O" and "water" denote the same thing, but each connotes a different kind of reality, one appropriate to the world of science and the other to the world of practice. Even in a hierarchically structured universe, Polanyi recognizes, we cannot achieve through some system of common idioms, a rationally explicit means of explaining boundary-crossing, whether we are addressing the phenomenon of emergence or of tacit integration. Influence across boundaries must always, he tells us, entail an element of mystery, of the unspecifiable, concepts, as we've noted, alien to Oakeshott's thinking.

I have not yet mentioned Oakeshott's treatment of philosophy as either a part of the "world of ideas" or as part of the liberal curriculum. Here, too, he has stirred considerable controversy among advocates of liberal education. In *Experience*, he makes it clear that philosophy is not to be viewed as one of the modes of experience. It represents totally comprehensive and wholly coherent understanding (what Oakeshott calls "concrete" knowledge), knowledge that has no conditionality (specific goal to attain), or boundaries. It is, in other words, Absolute knowledge. It is what Oakeshott calls the "whole of experience" or the "world of experience." By contrast, experience is modal to the extent that it is conditional (that is, organized around the attainment of a particular goal), therefore "abstracted" from the "concrete" (that is, totally comprehensive and completely coherent) "whole of experience," and therefore it is fragmentary and distorted in its comprehension. Modal experience represents an "arrest in experience." Although, viewed from the far more encompassing perspective of the whole of experience, or philosophy, modal experience has all these shortcomings and flaws, from its own perspective it understands itself as a complete and self-sufficient world unto itself.

Because of this, the various modes of experience, or fields of teaching and learning, are constantly tempted to view themselves as true and complete in their understanding, and therefore to assert hegemony over the other disciplines, as well as over philosophy itself. Philosophy, of course, because of its radically different idiom and universe of discourse, as we might expect, can have no substantive relevance for the modes than they

can have for it. By Oakeshott's interpretation of Plato's Cave Allegory, the philosopher, returned to the cave, deserved whatever abuse he received, for he had no business meddling in politics. He, with his totally disparate wisdom, however perfect, could only disrupt the proper workings of politics. For philosophers have no better understanding of politics than politicians have of philosophy. This disparity between the "modal" disciplines (science, history, poetry, practice, etc.) and the discipline of philosophy is even greater than that existing among the former. Philosophers must not be allowed to rule! Or even to advise rulers! Because philosophers cannot be assumed to be wise in "practical" matters (remembering that philosophy, even as the "whole of experience" is not the sum-total of its abstracted/distorted parts – that would only add up to one gigantic abstraction or distortion!), we might be well advised to take seriously this admonition. (Unless we might imagine a philosopher who is as well versed in politics; but even then his philosophical wisdom, on Oakeshott's terms, could have no bearing on his politics.)

Although philosophers cannot address themselves with substantive relevance to practitioners of other fields of learning, what philosophy can and should do within the university, as well as within society at large, Oakeshott advises, is to keep the various disciplines aware of their limits and of their proper relations among each other (and with itself), to warn them of the dangers that are involved in imposing their own idioms and paradigmatic assumptions upon those of another discipline, and to speak out forcefully when it perceives such interdisciplinary transgressions. In other words, philosophy, in its role toward the other disciplines, should be a referee, a protector of the, properly conceived, principles of liberal education.

"Principles" here are to be understood not as values but merely as the structural arrangements that insure the proper, or most efficacious, relations among the disciplines. Philosophy itself, according to Oakeshott, has no comprehension of, or use for, the concept of value. Here I find the most glaring weakness among Oakeshott's proposals. Values, he insists, belong only to the modal world of "practice." (He doesn't always distinguish clearly, but he seems to be referring here to *moral* values. He also occasionally speaks of *aesthetic* values, which belong to the world, or discipline, of the arts.) Oakeshott understands moral values and meaning from a Hobbesian perspective. They are mere servants of the task appropriate to the world of practice. The purpose of ethics (a sub-field within practice) is to optimize society's meeting of individual appetites and desires by assigning to human beings some quality of innate worth and, from this, deriving rules to keep people from harming each other or otherwise interfering in their pursuit of their desires. The values of a society are relative to the circumstances of each particular society, and usually the established traditions of a society will suffice for its moral compass.

Within an academic curriculum, ethics does not even have the over-viewing referee status assigned to philosophy. Universities are not justified in describing as one of their comprehensive tasks that of "building character." This, Oakeshott says, must be left primarily to a much longer period of more worldly experience. The "interval" of liberal education has no special place even for beginning or encouraging this process. It seems ironic that the various disciplinary studies he has defined need the protection from worldly influences that such an interval provides, but not ethical values – apart from those that are understood to facilitate the fulfillment of one's appetites and desires. And these latter values are created only within the "practical" sub-fields of politics, sociology, economics, where the objectives of each of these task-masters defines their substance.

I have analyzed to greater length this major failing of Oakeshott's philosophy elsewhere.[11] Here I'll only note that, despite his numerous insights in regard to the boundaries that define the various fields of liberal learning and the relations among them, his advice on the subject of value, if followed, would likely undermine

the very institution of liberal learning that he seeks to promote. There are many other issues addressed by Oakeshott in *Liberal Learning* that deserve our engagement. I recommend that fellow students of Polanyi give thoughtful attention to this collection of essays, but only after first perusing his *Experience.*

Endnotes

[1] *Personal Knowledge: Towards a Post-Critical Philosophy* (Chicago: University of Chicago Press).

[2] Cambridge University Press. Reissued in 1994. Hereafter referred to as *Experience*.

[3] A collection of six essays that Oakeshott authored between 1949 and 1974, originally published in 1989 by Yale University Press, and subsequently reissued in 2001, by the Liberty Fund, Indianapolis, IN. Hereafter referred to as *Liberal Learning.* The specific essay I refer to is Oakeshott's "Learning and Teaching" (1965). Although none of the other essays in this collection (three authored before his review of Polanyi's *Personal Knowledge* and two after) suggest any influence from Polanyi, this essay contains about a dozen terms and several statements that sound very Polanyian. Yet, even in this essay, none of these apparent, and unacknowledged, borrowings represent much more sustained appreciation of Polanyi's concepts than his other writings, and they certainly never fundamentally challenge any of Oakeshott's dominant, and very "un-Polanyian," perspectives noted above.

[4] "The Human Coefficient," *Encounter*, vol. 11 (London, September 1958), 77-80.

[5] "Learning and Teaching," (1965), pp. 35-61.

[6] *Ibid.*, except for the last phrase, which is from another of his essays in *Liberal Learning*, "A Place of Learning," first presented as a lecture in 1974.

[7] *Experience*, 31.

[8] E.g., Polanyi, *The Tacit Dimension* (NY: Anchor Books, 1967), 44-45. Hereafter referred to as *Tacit.*

[9] *Experience*, 28.

[10] *Liberal Learning*, 22.

[11] See my more extended critique of Michael Oakeshott's philosophy in "Michael Oakeshott as Philosopher: Beyond Politics, A Quest for Omniscience," in *The Political Science Reviewer: An Annual Assessment of Scholarship*, vol. 32 (2003), 221-68

REVIEWS

Nancey Murphy and George F.R. Ellis. *On the Moral Nature of the Universe: Theology, Cosmology and Ethics*. Minneapolis: Fortress Press, 1996. Pp. xvi + 268. ISBN: 0-8006-2983-3. $22.00, paper.

Nancey Murphy, Associate Professor of Christian Philosophy at Fuller Theological Seminary, and George F.R. Ellis, Professor of Applied Mathematics, University of Cape Town in South Africa, construct a bridge between the humanities and the sciences in this ambitious project. Inspired largely by Imre Lakatos, Alasdair MacIntyre and John Howard Yoder, the two authors develop a schema for relating the natural sciences, the social sciences, ethics and theology at the same time that they construct a theology that draws from these areas of inquiry. They propose that a kenotic theology and ethic (one of self-renunciation) is indicated on both scientific and theological grounds and that such an ethic is, in fact, socially viable.

The first chapter of the book introduces their project by first identifying the need that inspires it. Murphy and Ellis suggest that, given evidence of a new hunger for meaning in the post-modern world, the time has come to develop a coherent cosmology "that relates human life to both the natural world and to nature's transcendent ground" (1), thus providing an objective basis for morality. They carefully set out a summary of the findings of the natural sciences regarding top-down and bottom-up causation, evolution, the big bang, and the anthropic principle, concluding with the assumption that the sciences cannot resolve the metaphysical issues raised by the results of their own investigations. In this chapter, Murphy and Ellis also identify their philosophical commitments, aligning themselves with those who acknowledge that all knowledge is conditioned, even the scientific and moral, but who do not think that such a fact entails the conclusion that such knowledge is unreliable or relativistic. Theologically, they assume that theological reflection does, in fact, provide knowledge of the transcendent, in addition to locating themselves in the Anabaptist wing of Christianity (Murphy is Church of the Brethren and Ellis is Quaker). They also give an account of how science works, synthesizing Carl Hempel's explanation of hypothetical deductions, Lakatos' account of scientific research programs and MacIntyre's proposal for rationally adjudicating conflicting claims made by forms of inquiry that are all tradition-bound.

Over the next several chapters, Murphy and Ellis construct the framework by which they propose to relate the sciences, ethics and theology. One can visualize this framework as consisting of a roof supported by two columns that rest on a three-layered floor. Starting from the bottom of the structure and working up, the floor consists of three layers: physics, chemistry and biology. The column on the left is made of geology and ecology, astrophysics and cosmology. The column on the right is made up of psychology, the social and applied sciences, motivational studies and ethics. The roof, that serves to connect both columns, is metaphysics/theology.

Murphy and Ellis organize this model according to two principles, the first of which is complexity, so that more complex entities (and the corresponding forms of inquiry) show up higher in the structure. It is important to note at this point that the authors affirm that the complexity of reality allows for causation to occur both from the top down and the bottom up (see especially 22-32), which makes room for human freedom (32-37) and divine action (214-218). A second principle is to distinguish between human and natural sciences, which diverge as one moves above the biological level and thus warrants the two columns.

Murphy and Ellis argue that the social sciences are incomplete without attending to ethics, by which one can assess the assumptions and goals of the

social sciences (chapter 5). Ethics itself, however, is incomplete without some way to adjudicate its claims. Put differently, any ethic presupposes a metaphysic (173). That observation, combined with the realization that any scientific cosmology leaves unanswered many metaphysical questions (60-62) leads the authors to place metaphysics/theology at the top of their hierarchy, thus finally bringing together both natural and social sciences.

As impressive a feat as it is simply to construct this edifice for locating various forms of human inquiry, Murphy and Ellis are not content to leave matters only in the abstract. They therefore propose ethical and theological content for the model, content that they think will make sense of at least some of the scientific data and provide a rich program for further research. They recommend a kenotic ethic, i.e., one that asserts that "self-renunciation for the sake of the other is humankind's highest good" (118) because it, paradoxically, "is the way to open oneself up to a greater good . . . totally transcending the miserly ethic of nicely calculated debts and duties" (121). Such an ethic entails renouncing possessions, rights (including a right to retaliate), and violence (but not necessarily coercion—see 151-159), as well as submitting to God, and developing of intellectual humility. Murphy and Ellis go on to argue that such an ethic is indeed possible as a social ethic, suggesting applications in and examples of specific practices in the areas of law, economics and politics. For example, they examine societies that have tried to practice restorative justice instead of punitive justice (122-126). They conclude their ethical proposal with a call for others to design studies that might test their thesis that "the consistent policy of using the lowest degree of coercion needed to be effective will have a cumulative effect, increasing the effectiveness of less coercive means in the long run" (159).

Such an ethic, by their own admission, needs a metaphysical basis in order to be complete. They therefore turn to Yoder's understanding of God, which they summarize in this way: "The moral character of God is revealed in Jesus' vulnerable enemy love and renunciation of dominion" (178). They defend their Anabaptist view in several ways, first by suggesting that it can better account for the anomaly of the Church's complicity in evil than can Roman Catholic or Protestant traditions (198-199). Secondly, they offer plausible alternatives to traditional readings of biblical passages that are usually used to rebut nonviolence (199-201). In addition, they argue that a kenotic ethic and metaphysic is consistent with findings of the natural sciences. They summarize this claim by saying that the sciences suggests that "all living things must participate not only in taking of life in order to live but also in the painful *giving* of their lives that others might live" (213, emphasis theirs). Finally, they find that this way of understanding best helps us understand the problem of theodicy, by showing that "suffering and disorder are necessary byproducts of a noncoercive creative process that aims at the development of free and intelligent beings" (247).

Polanyians will certainly find much with which to sympathize here. Even though it does not explicitly draw from Polanyi, *On the Moral Nature of the Universe* resonates with several features of Polanyi's work. It echoes his drive to develop a comprehensive vision of humanity's place in the cosmos, as well as his understanding of the process of discovery and his account of hierarchies and dual control. At the same time as Murphy and Ellis in many ways follow a Polanyian trajectory they differ most notably in their quite specific theological and ethical commitments.

By way of critique, there is much to affirm about this book. It offers an example of creative bricolage, bringing together sources, most notably MacIntyre and Yoder, for service in a project that echoes the quintessentially Enlightenment/modern attempt to develop an encyclopedia of human inquiry (interestingly enough, a project with which MacIntyre and Yoder vigorously disassociate themselves!). Murphy and Ellis make their case clearly, and in many ways convincingly, in part because they build on already widely-accepted positions, such as the claim that the sciences raise boundary or limit questions that

cannot be resolved on scientific grounds, or the state of evolutionary theory. The authors are to be affirmed for treating ethics and theology as comprehensive forms of inquiry that cannot work in a vacuum. As complicated and messy as the process may be, ethics and theology must be pursued with multiple conversation partners, including the natural sciences. In addition, Murphy and Ellis provide a useful apology for the practicality of nonviolence by challenging critics with specific examples of how nonviolence can and has, in fact, "worked," as a social ethic. The way they differentiate persuasion, coercion and violence is quite helpful and worth widespread consideration. Moreover, in a culture as self-centered as ours, the call to self-renunciation needs to be sounded and heeded.

There are also some questions that need to be raised about the project. First, are the authors too enamoured with the anthropic principle? As much as they try to remain cautious about and qualify their affirmation of the "fine-tuning of the universe" for the emergence of human life, they clearly affirm its truth and may well ignore evidence that the universe is not designed to guarantee human well-being. As theologian James M. Gustafson might observe, Murphy and Ellis seem to work anthropocentrically and not theocentrically. A second question concerns the nonviolence of the natural world. While it is fair to say that death plays a role in the creation of new life, is it fair to say that all lives are freely given? Might some be simply taken nonvoluntarily? Put differently, is nature as noncoercive (and thereby as nonviolent) as the authors suggest? A third question concerns the adequacy of self-renunciation as a comprehensive ethic. As feminist thinkers and others have reminded us, there are important matters at stake in when someone calls another to self-renunciation. If someone in power is speaking to someone who is relatively powerless, self-renunciation may well result, not in the finding, but in the loss of the self. While I would expect Murphy and Ellis to acknowledge this danger, their account of self-renunciation needs to be more finely-nuanced. Moreover, most systems of ethics do not reduce the moral virtues to a single one. What happens to other qualities of character in an ethic of renunciation? Again, is self-renunciation sufficient basis for an ethic? Such one-dimensional ethics often turn out to be incomplete, thereby distorting the richness and complexity of moral experience and reflection.

Such criticisms are, in the end, somewhat misplaced, however, because the authors readily acknowledge that any single chapter of the book deserves its own book-length treatment. Overall, one must be impressed with the scope and creativity of this project, as well as the authors' willingness to go against the grain of much post-modern thinking that resists the kind of expansive and synthetic project in which Murphy and Ellis engage.

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Michael Oakeshott, *Morality and Politics in Modern Europe: The Harvard Lectures*. Shirley Letwin, ed. Introduction by Kenneth Minogue. New Haven: Yale University Press, 1993. Pp. xii + 115. ISBN:0-300-05644-3. $18, hard cover.

This book consists of eight lectures delivered by Michael Oakeshott at Harvard University in April, 1958. He was then in his fifties and had occupied the chair of Political Science at the London School of Economics since 1951. He was also, at the time, editor of the *Cambridge Journal.*

As a university lecturer, Oakeshott's approach was typically to present his topic in its detailed and elaborate cultural context, weaving subject and related culture together within an equally exacting theoretical framework. Those who have agonized over Oakeshott's more philosophical works, marked by his proclivity for abstraction and his further proclivity for "clarifying" his abstractions with still more abstractions (which, to his thinking, are all really encounters with the "concrete"), will find relief in this latest published addition to his more political/historical writings.

This is not to say that this lecture series does not conform to his usual style. It is characteristically elaborate, detailed, and ordered by an encompassing theoretical structure, but the concepts and ideas that emerge are presented in a very tangible, often lively, connecting narrative of persons and historical events that take the reader on a very engaging and surprisingly encompassing, nearly five-century, tour of changing moral beliefs in Europe and their political repercussions.

In his early ground-breaking philosophical work, *Experience and Its Modes*, Oakeshott establishes that the primary task of the philosopher is to articulate the grand "whole of experience" by means of clear definitions in order to make this experience, as it is refracted into the more limited and immediate areas of human thought and practice, comprehensible and orderly. Therefore, he devotes his first three lectures to distinguishing such basic concepts as "government" and "politics," "constitutional" versus non-constitutional societies, various types of political reflection, legality versus morality, "sovereignty," the "character" of a political society, and (drawing upon both Aristotle and Montesquieu) the specific types of governments – definitions that he consistently adheres to throughout the rest of the lecture series. However, these concepts are represented not as something distilled from the ethereal realms of abstraction, but as major historical thinkers and events have presented them to us.

The overall task that Oakeshott sets for himself in *Morality and Politics* is to show how, over the course of modernity, the "morality of communal ties," which had been identifiable in Europe as early as the eleventh century, began by the sixteenth century to give way successively to the "morality of individuality" and, in reaction, eventually to the "morality of collectivism." Again, he is consistent with his insistence in *Experience and Its Modes* that, since we have no access to any higher, least of all absolute, standard by which to evaluate moral values, the study of morality should be descriptive rather than prescriptive: it should analyze, without normatively assessing, moral ideas as they are presented to us by history – merely reporting the moral judgments that others have made and showing how these might be "explained" in terms of their social, economic, political, and historical contexts.

Further breaking down the "individualist" and "collectivist" moralities into their specific religious and secular expressions, and – still further – "collectivist" morality into its "productivist" and "distributionist" versions, Oakeshott devotes the final five lectures to his breathtaking survey of the contributions to each of these "moralities" by such thinkers as Milton, Hobbes, Locke, Hume, Descartes, Francis Bacon, Rousseau, Kant, Paine, Hegel, Bentham, Mill, Adam Smith, William Petty, Robert Owen, St. Simon, Marx, and by such moral/political movements as those represented by the Calvinist communities in Geneva, Basel, Bern, and Zurich, as well as the various Puritan Millenarian sects, the French *Philosophes* – and others.

For other authors, such an ambitious attempt in the space of barely over one hundred pages would probably end up reading like a set of CliffsNotes, but – coming from the always fascinating mind of Michael Oakeshott – this work represents a delightfully informative read.

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Stephen Turner. *Brains/Practices/Relativism: Social Theory after Cognitive Science.* Chicago: University of Chicago Press, 2002. Pp. ix + 214. ISBN 0-226-81740-7, $19 paper; ISBN 0-226-81739-3, $46 cloth.

Stephen Turner, graduate research professor and chair of the Department of Philosophy at the University of South Florida, is well known for his writings on Max Weber and on social philosophy, in which field, to take one example, his *The Social Theory of Practices* (1994 – see the review article by Walter Gulick and response by Turner in TAD 25:1 [1998]) has stirred up a good deal of interest.

Brains/Practices/Relativism consists in essays of Turner that were, with one exception, published between 1998 and 2001. Of his ten essays in the book, nine are social philosophical, the other being an intellectual-historical account of sources and themes of that fascinating thinker, Edward Shils. Tacit learning, social reality in the account of John Searle, relativism, and contextualism are among the topics of Turner's essays in this collection.

The present review dissects Turner's ideas on different dimensions of *practices*, paying particular attention to his 'Introduction' wherein the bone structure of his thinking is to be found.

Turner suggests a number of distinct questions concerning *practices*: are practices teleological, to what do they owe their continuity, do practices involve composites ('ensembles') of objects, if so, in virtue of what 'glue' do the ensembles cohere, and do the composites have psychological counterparts?

Having wrestled with it in his book of 1994, Turner's chief problem about practices continues to be to identify the *source of their unity*. According to 'collectivist' theories, members of a group, engaging in the same practice, do so, immediately, on account of their having mental contents in common, and, mediately, in virtue of there being cultural objects (whether traditions, presuppositions, frameworks) in which the common mental contents in some sense partake. Turner cites Michael Dummet's theory that in order for people to speak a language they need to have implicitly grasped the principles governing its use.

A complex hypothesis of Turner, logically adventitious to but informing a good deal of the discussion in this book, turns on the connectionist theory of the brain. Contrasting to cognitivist accounts of the brain as a manipulator of symbols, connectionism depicts the brain as a multilayered neural network, the units of each network consisting in simple processors that activate or inhibit one another along myriad links. The distinguished connectionist, Paul Churchland, envisages humans learning within the constraints, and in response to the pressures, of experience. Experience, according to Churchland, alters the strength of synaptic connections, with each individual agent being affected differently and having a unique history of learning.

Drawing from this theory, Turner explains that such mental contents as rules of language, structures of conversation, and gestures are learned through connectionist habituation. Recurrence of certain of the inputs (including words, and syntactical rules), and the fact that groups of agents may receive many of the same inputs (as in school classrooms), help in explaining why it is that agents often have similar habits, notwithstanding that each agent has to use interpretative skills so as to convert inputs into personal mental contents. Other inputs are non-explicit, with intelligent problem-solving and emotional responses, for example, being conditioned by tacit mechanisms.

Turner *rejects collectivism*: tacit mental contents and practices do not consist in a group of practitioners possessing a collective object. There is no means by which a collective object could be mentally acquired by agents, no mechanism such as could ensure that agents *shared the same* rules, presuppositions, or the same practice. None of these things, so far as Turner is concerned, exists autonomously, over and above the primal process of habituation by connectionist learning. (Neither in this book, nor in that of 1994, does Turner discuss Karl Popper's theory of *objec-*

tively existing knowledge, the content of which Popper denominated as World 3. It would be of interest to have Turner's assessment of Popper's theory of autonomous cultural objects.)

The items that Turner subsumes under the class of 'practices' are nothing if not diverse. Turner suggests that concepts of practices are roughly distinguishable into four types. Of particular importance for Turner is the class of concepts of practices as *social-and-cognitive* (Turner cites such notions as paradigm, worldview, presupposition, structure of meaning, tacit knowledge). There are, as well, concepts of practices as social-and-*sub*cognitive (the notions of skill, *habitus*, *mores*, form of life, tradition as conceived of by Oakeshott and Shils respectively). As well, Turner divides concepts of practices as *nonsocial* between the cognitive and the subcognitive.

The devil's advocate might ask whether worldviews, for example (or the likes of presuppositions or tacit knowledge) are *practices per se*, as Turner suggests. Perhaps some of them are. But identity is not the only imaginable relation between worldviews and practices. Worldviews might *underlie* and influence practices; *different practices* might arise in the context of a single worldview (or on the basis of the same set of presuppositions). A worldview may *not* give rise to, or be coupled with, any practice (as with atomism and heliocentricism in the ancient world), or a worldview might *outlive* a practice(s) to become a mere object of intellectual-historical curiosity (e.g. 'the great chain of being' as studied by A. O. Lovejoy, E. M. W. Tillyard, and others). Furthermore, each of what Turner regards as a concept of practice (presuppositions, tacit knowledge, skills, traditions) may in fact refer to *parts*, intimately interrelated, of a practice, with Kuhn's paradigms as the complex *disciplinary matrixes* of 'normal science' being a case in point. So the concepts of 'practices' that Turner cites may relate to practices, and to one another, in very different ways. Is an abstract study of practices such as we find in *Brains/Practices/Relativism* (and in Turner's *The Social Theory of Practices*) able to do justice not only to these criss-cross relations but to the considerable differences of substance, method and aim that exist between the plethora of practices (speculative physics, engineering, archaeology, horticulture, sculpture, wine production, etc.)?

Written by a scholar of impressive learning and extensive interests, *Brains/Practices/Relativism* is recommended by this reviewer to anyone who wishes, not so much to be introduced to but, at a more advanced level, to become better informed on recent thinking on social ontology and epistemology.

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Electronic Discussion List

The Polanyi Society supports an electronic discussion groupthat explores implications of the thought of Michael Polanyi. Anyone interested can join. To join yourself, go to the following address: http://groups.yahoo.com/group/polanyi_list/join If you have difficulty, send an e-mal to Phil Mullins (mullins@mwsc.edu) and someone will see that you are added to the list..