Tradition & Discovery
The Polanyi Society Periodical

Preface

Struan Jacobs' essay herein compares Popper and Polanyi, a topic touched in some earlier essays, but Jacobs' discussion is an impressively thorough one. Kyle Takaki, a new *TAD* author, also interestingly puts Polanyi together with Johnson and Lakoff and Merleau-Ponty in this issue.

For the third time, *TAD* is featuring reflections by former students on William H. Poteat, a figure who early discovered and taught the post-critical thought of Michael Polanyi and who inspired generations of Duke students to consider the contradictions of modernity. The panel on Poteat at the 2008 Loyola Polanyi conference was the source of the recent set of reflections in 35:2. Mel Keiser, one of Poteat's early students, did not make the conference but was inspired by the *TAD* essays and carefully formulated his own response to Poteat; the essays by Elizabeth Newman, Murray Jardine, Araminta Stone Johnston and John Berkmann are those of Poteat's last students, a group under-represented in previous discussions of Poteat.

Paul Lewis and Walter Gulick have provided review articles covering some recent scientific literature that can be linked to Polanyi's ideas and Polanyian projects. Gulick has also written a review of a new and interesting book that grew out of the recent "multiple democracies" conference sponsored by the University of Bergen in Norway and Shanghai's East China Normal Univeristy. Lewis also reviews a book on "extended mind," a topic now popular in philosophy of mind.

Take a close look at what is in "News and Notes." Especially important is the call for graduate student papers to be featured at the late October 2010 Polanyi Society annual meeting (see p. 3). Also you will find a note about dues payment, a call for donations to the Travel Fund and the Society's financial records and minutes from the November annual meeting.

Phil Mullins

NEWS AND NOTES

Invitation to Graduate Students To Submit Papers For Polanyi Society Annual Meeting October 30, 2010

At the 2010 Polanyi Society annual meeting (to be held in conjunction with the American Academy of Religion annual meeting) both paper sessions will be devoted to the work of current or very recent graduate students who have an interest in Polanyi. Sessions are tentatively scheduled for Saturday, October 30, from 9:00 to 11:30 a.m. with a second session following on Saturday evening (probably 7-9:30 p.m.). Locations and times for sessions will be finalized later in the year and will be included in a later issue of *TAD*; they will be also be posted on the Polanyi Society web site as well as the web site used for the AAR Additional Meetings schedule.

Three papers will be presented in each session. Each paper is to be no more than six double-spaced pages, giving a maximum reading time of 20 minutes per paper. Participants who wish to expand their presentation papers into a longer format will be given priority consideration for publication in *Tradition and Discovery*: *The Polanyi Society Periodical*.

Graduate students are invited to submit a 300- to 1000-word proposal by March 1, 2010, the regular AAR conference submission deadline. Proposals that focus on some aspect of Polanyi-related research or that use Polanyi en route to developing an issue will be considered. Topics can be on any of the many areas that interested Michael Polanyi, such as: epistemology, metaphysics, theology and science, philosophy of science, culture, economics, sociology, and political philosophy.

If you have or know a talented graduate student(s) who is unfamiliar with Polanyi's work but might find it useful, please encourage the student to read Polanyi and submit a proposal. Prior expertise on Polanyi is not expected, only current interest. The Society also hopes to provide some modest travel funds for students presenting at the Atlanta meeting.

Questions and submissions can be directed to Neil Arner (neil.arner@yale.edu or 203-468-6824), a graduate student at Yale who is coordinating the program.

A Note on Dues Payment

Please notice that this is a *TAD* issue with an enclosed self-addressed envelope to be used to pay 2009-2010 academic year membership dues IF YOU HAVE NOT ALREADY DONE SO. Because of postage regulations, EVERY copy (even if you have already paid dues) must weigh the same and therefore must include an envelope. An envelope also was included in the October, 2009 issue. If you cannot recall if you have already paid, e-mail an inquiry to Phil Mullins. Dues remain $35 ($25 for libraries and $15 students), a true bargain in the academic journal world.

Many have generously included with dues payment a tax deductible contribution to the Society; these dollars go to promote things such as our new Speakers' Bureau and the Travel Fund which will be seriously tapped to help defray travel for the 2010 annual meeting featuring graduate students. See the discussion of both the Speakers' Bureau and the Travel Fund below.

If you do not wish to mail dues in the self-addressed envelope, you can also still simply send an e-mail to Phil Mullins (mullins@missouriwestern.edu) with credit card information and authorization to debit your account. With luck, there will soon be available a dues payment form on the Polanyi Society web site that you can complete on-line and e-mail to Mullins.

The Travel Fund and 2010, "The Year of the Young Scholar"

Walter Mead

Members and friends of the Polanyi Society have always been quick and generous in responding to appeals to shore up the Society's funds—whether the appeal has been for the general fund after a more-costly-than-anticipated conference, or for prepublication orders to encourage a publisher to re-issue an out-of-print book by Polanyi, or for rebuilding the Travel Fund to help young Polanyian scholars to attend our meetings.

The Society has always managed to meet its needs through a combination of frugal operations and the generosity of supporters. With a wish-list of new projects the Society would like to engage in—such things as a Speakers' Bureau, expanded resources to encourage Polanyian scholarship, special collaborative programs to bring Polanyian perspectives into dialogue with such correlative interests as those represented by phenomenologists, gestalt psychologists, quantum theorists, etc.—we are hoping to establish for the Society a more substantial financial base less reliant on ad hoc appeals by exploring the potential for foundational support, individual estate planning, perhaps even the possibility of establishing sufficient funding for an endowment.

Meanwhile, I must once again make an ad hoc appeal for contributions to our Travel Fund, established only a few years ago to provide travel subsidies for young Polanyian scholars who otherwise would find it difficult to attend our programs. Because of the exceptional travel costs, as well as — for some — the cost of obtaining a passport, incurred by those traveling from the U.S. to our 2009 annual meeting in Montreal, and also because members had recently contributed generously to other Society projects, I did not anticipate that the Society would be able to provide much help for travel assistance to our Montreal meeting and, therefore, did not strongly urge contributions to the Travel Fund in 2009.

Our Travel Fund, as a result, began the year at barely over $400 and at the end of the year stood at about the same amount. This new year 2010, however, is a different year. For the first time in the Society's history, we are making multiple and concerted efforts to attract and encourage young Polanyian scholars by structuring the program of our annual meeting, in October 2010, around their scholarship and involvement, as presenters and discussants.

Also, a subsequent issue of *TAD* will feature qualifying essays authored by young scholars. In China, 2010 has been designated "The Year of the Tiger." I suggest that, for the Polanyi Society, this year might properly be regarded as "The Year of the Young Scholar." If we succeed in truly carrying out this effort in 2010, the fruits of our efforts will be apparent in an even more flourishing body of Polanyian-related scholarship in 2020 and 2030.

For our meetings in the continental U.S., we have been able to make travel possible for young scholars with an average grant of about $300. Given increased flight costs, to be able to address the anticipated needs of six young scholars, we hope to be able to build our travel fund to $2,000. *An anonymous donor, enthused about our focus this year on young scholars, has offered to match contributions of $300 with a similar amount.* However, smaller contributions will be just as gratefully received. Please excuse this request for contribution if it comes as an "overkill." I have been advised that several members made generous contributions when paying 09-10 dues.

Because the Polanyi Society is registered as a non-profit organization, contributions are tax-deductible. Checks should be made out to the "Polanyi Society - Travel Fund" and mailed to **Walter Mead**, 4 Kenyon Court, Bloomington, IL 61701. For additional information, e-mail Mead (wbmead@comcast.net).

Minutes of Combined Board and Member Meeting of Polanyi Society
November 7, 2009
Montreal

1. The meeting was called to order by Wally Mead, President. It was determined a quorum was present.

2. Reference was made to a two part China Report emailed to Board members by Walt Gulick and Phil Mullins. The fuller oral report was made the previous evening in a restaurant too noisy to conduct regular business. Zhenhua Yu is hoping to organize a conference in China in 2011 sponsored by the Center for Knowledge and Action; he is seeking funding for this effort. Zhenhua would like to invite other scholars in China who study Polanyi to participate. Insofar as it is appropriate, Gulick urged the Board to be supportive of such efforts.

3. Upon recommendation from the Nominating Committee, the following were unanimously re-elected to 3-year terms on the Board: Tony Clark, Esther Meek, Zhenhua Yu. Charles Lowney was elected to a 3 year term to succeed Marty Moleski, who completed his years of eligibility, serving well as secretary during those years.

4. Wally Mead asked to step down from his position as President to attend to other duties and interests he had put off during his three years in office. Walt Gulick noted a few of his many accomplishments, and the Board thanked him for his exceptional service. Mead thanked Board members for their support and for his opportunity to serve. Mead will continue to be the point person for seeking and dispersing travel funds for young scholars.

5. David Rutledge was elected to the Presidency and Dale Cannon was elected Secretary.

6. The outline for a Speakers' Bureau drafted by Mullins was discussed and approved with details to be worked out. A committee of Mullins, Lewis, Gulick and Lowney will oversee the development of the bureau. Publicity about the program highlighting available presentations will be generated; colleges and universities likely to be interested will be targeted at first, and host schools would usually be expected to cover the costs of securing speakers.

7. The Treasurer's Report prepared by Jere Moorman was approved with the proviso that the approximately $8,000 in the Scott Fund should be included in the report as a special fund or endowment. Richard Gelwick will be contacted to see if any of the Scott funds might be used in support of young scholars presenting next year in Atlanta. Mullins reported that $2300 more was received in support of *TAD* than was spent this fiscal year, but that the Loyola Chicago conference did not quite break even.

8. Mead sent a letter of thanks to Missouri Western, when Mullins retired in May 2008, for its support of *TAD* and the Polanyi Society. That letter was made available to the Board.

9. Mullins noted that about 150 individuals and institutions are now receiving *TAD* electronically and about 300 individuals and institutions receive the paper version, including about 30 persons overseas, each issue of which costs $4 to $5 apiece to send. Those receiving only the electronic version do not receive the request for dues and the mailer. Mead said his 300 letters requesting dues payment netted little return, but at this point Mullins said that the stamped and pre-addressed envelopes recently included in *TAD* mailings are bringing faster renewals than usual, and that e-mail records are now improved. There were 80 persons (or institutions) who paid memberships and/or made donations in academic year 2008-2009, and this generated $4475 as against *TAD* expenses of $2130 (counting October, 2009). That is, the Polanyi Society is blessed with generous contributors who cover costs for our current level of operation.

10. Gulick reported that the Polanyi Reader will be sent to Oxford University Press once the bibli-

ography is tidied up; he will test the Reader in the spring when he teaches a course on Polanyi in Estonia.

11. Newly elected President Rutledge, noting tightened budgets for travel, asked whether it would be wise to schedule Polanyi Society meetings every other year. This was not deemed necessary, but it was thought that perhaps the Friday night time slot might be used for the Board meeting and the two paper sessions be scheduled on Saturday, since the AAR seemed open to such scheduling and attendance is weaker on Fridays.

12. Mead reported on a 3 day Liberty fund colloquium in Indianapolis during which he and Mark Mitchell spent considerable time discussing Polanyi's thought.

13. The possibility was raised of a future conference in New Haven celebrating the new Poteat Archives at Yale Divinity School that Mead has been helping establish.

14. Neil Arner was present to describe the Polanyi Society program for Atlanta in 2010 that he and Phil Rolnick have been arranging. They hope to recruit 4 to 6 undergraduates, graduate students, or recent graduates without regular academic positions to give brief papers (up to 6 pages) involving Polanyi's thought. At present the approach is to contact professors for their recommendations of promising candidates, but some sentiment was expressed to send out a public announcement of the opportunity in *TAD* or on the Polanyi Society Discussion List. It was suggested that young scholars might profitably be linked to mature Polanyi scholars who could serve as mentors.

15. During a discussion of ways of expanding Polanyi's impact and securing funding for such an effort, Diane Yeager noted that we could consider seeking an NEH Summer Seminar on Polanyi, but suggested that proposals had a much better chance to be funded if Polanyi was linked with more widely known figures like Merleau-Ponty, Peirce, Grene, etc. There is a certain amount of arbitrariness (or even neglect – note

our Koch grant application) in the evaluation of proposals for funding; it often appears that luck in drawing sympathetic or knowledgeable evaluators is the crucial factor in securing funding.

16. The meeting was adjourned at about 12:50 p.m.

Submitted by Walt Gulick, subbing for Martin Moleski

Polanyi Society: Treasurer's Report 9/1/08-8/31/09

Statement Balance (9-01-08)   9,424.91

Income:

12-17 Membership, gifts	3,300
02-17 From Wally Mead:	1,664
(From Wally Mead: for TD purchase from U/Chicago press. See debit [04-02] below)	
02-28 Correction deposit (Dues)	160
04-15 Membership, gifts	2,000
Total income:	7,124

Expenses/Debits

09-26 *TAD* 34:3 (09-08)	572.23
10-14 Transfer to CD (Scott)	7,885.59
(Interest of $159.30 due to be posted on 09/14/09: not on this report)	
03-26 *TAD* (02-09)	1,505.57
04-02 *Tacit Dimension*	1,664.00
(To Wally Mead for purchase of *TD* from U/Chicago press (See income [02-17] above)	
05-22 AAR (2009)	240.00
06-08 Travel Fund	40.00
Total expenses and debits:	11,907.39

A. Beginning Bal. checking	9,424.91
B. Income	7,124.00
C. Expenses and debits	11,907.39
08-31-09 Bal.	4,641.52
Post 08/31/08 Notes	
10-14-08 Scott 2% CD interest	159.30

Marjorie Grene Memorial and Memorial Fund

Last spring, there was a memorial event honoring Marjorie Grene at Virginia Tech. Many of her students, colleagues and family commented on Grene's life and work. A recording of the event is on the web, along with photographs at: http://www.phil.vt.edu/people/memoriam.html . A memorial fund that will support things done in Grene's honor has been established. If you are interested in making a contribution, contact Jim Klagge (jklagge@vt.edu).

Yale Divinity School Collection Of William Poteat Papers

As noted in earlier issues of *TAD*, a collection of William Poteat's papers is being established at the Yale Divinity School Library. This project is now moving into its final stages. Soon Walter Mead will deliver materials to YDS. If you have not heard about this project and have materials that you think would be of value to this Poteat Collection, please inform Wally Mead (wbmead@comcast.net)**.**

Appraisal

The October 2009 (v.7, n. 4) issue of *Appraisal: The Journal of the Society for Post-Critical Philosophy and Personalist Studies* was recently published. The following articles are in the ssue: (1) **Wendy Hamblet**, "Jacques Rancière: The Philosopher and His Poor on the Shores of Democratic Politics"; (2) **Fauve Lybaert**, "Mental Causation and Explanatory Practice"; (3) **Ignacio Moya Arriagada**, "The Primacy of Space in Heidegger and Taylor: Towards A Unified Account of Personal Identity";(4) **Gregory de Vleeschouwer**," 'Person' Seeks 'Man'"; (5) **Ivan Welty**, "Singularity and Personal Identity"; (6) **R. T. Allen**, "Raymond Tallis and the Alleged Necessity of a Body for Personal Identity." The last four of these essays were papers from the recently concluded Tenth International Conference on Persons.

The revamped *Appraisal* website at http://www.spcps.org.uk/ has the table of contents of all issues going back to volume 1 in March 1996. You can order a CD with all back issues, volumes 1 through 6. Payments can now be made via the website, making things much easier for subscribers outside UK.

New Speakers' Bureau

The Polanyi Society Board recently appointed a commitee to put together a Speakers' Bureau for the Society. Although planning is just beginning, if you are interested in finding a speaker, please contact Phil Mullins (mullins@missouriwestern.edu /816-244-2612).Topics for talks can be general (e.g., Polanyi's account of science) or more specific (e.g., Polanyi on truth and propaganda) and perhaps can be negotiated. Eventually, informaton about Speakers' Bureau programming will be posted on the Polanyi Society web site.

Tradition in a Free Society: The Fideism of Michael Polanyi and the Rationalism of Karl Popper

Struan Jacobs

ABSTRACT Key Words: tradition, knowledge, science, freedom, rationalism.

Michael Polanyi and Karl Popper offer contrasting accounts of social tradition. Popper is steeped in the heritage of the Enlightenment, while Polanyi interweaves religious and diverse secular strands of thought. Explaining the liberal tradition, Polanyi features tacit knowledge of rules, standards, applications and interpretations being transmitted by "craftsmen" to "apprentices." Each generation adopts the liberal tradition on "faith," commits to creatively developing its art of knowledge-in-practice, and is drawn to the spiritual reality of ideal ends. Of particular interest to Popper is the rationality of social traditions. Likened by him to scientific theories, Popper's traditions are criticizable and improvable, assisting agents to understand, and act in, the world as stable and predictable. Polanyi's is the more informative rendering of tradition. Polanyi delves deeply into important areas where Popper only scratches their surface: the tacit dimension, transmission by way of apprenticeship, the meaning of tradition for those who participate in it, and the extent of its authority over them.

Michael Polanyi (1891-1976) and Karl Popper (1902-1993) each produced an important analysis of the nature and role of traditions in free societies.[1] Polanyi sheds light on the non-rational dimension of the liberal tradition, overarching tradition of his free society, emphasizing its underlying faith commitment, and its embodiment of unformulated knowledge. Popper's analysis of tradition, steeped in the heritage of the Enlightenment,[2] depicts the rationalist tradition as pivotally important in the life of the "open society." Popper's highlights of human history include "those periods" in which people "attempted to look upon human affairs rationally."[3] Popper's account of tradition resembles that of Polanyi in its inclusion of faith commitments (fideism), but Popper features rational criticism as an instrument for assessing traditions. This article analyzes Polanyi and Popper's theories of tradition, arguing that Polanyi's theory, while not without its problems, is the deeper and more nuanced of the two in that it discloses dimensions, and explains complexities, of tradition that Popper's theory glosses over or ignores.

The principal source for the discussion of Popper's theory is his article "Towards a Rational Theory of Tradition" (1949/1972), complementing ideas he discussed in his *The Open Society and Its Enemies* (1945). Polanyi expressed his theory in various writings, including *Science, Faith and Society* (1946), *The Logic of Liberty* (1951), "On Liberalism and Liberty" (1955), and *Personal Knowledge* (1958). Popper's stated aim in his article is to outline a theory of tradition, showing that traditions can be objects of rational assessment and discrimination. Tradition, for Popper's agent, exists objectively, and is criticizable on account of this, whereas Polanyi's agent embodies, and lives in ("indwells"), her tradition, making it difficult for her to criticize.[4]

The Context Of Polanyi's Image Of Liberal Tradition

The reader will be put in a better position to understand Polanyi's theory of the liberal tradition by being acquainted with its theoretical context. Polanyi views the free society in fiduciary terms, as an inclusive

"spontaneous order" with citizens <u>dedicated</u> to principles, of which the most general affirms thought as an "independent force" with a superior standing to secular interests of government, class, and self.[5] In what may have been intended by him as a criticism of Popper's theory, Polanyi wrote that "private individualism is no important pillar of public liberty. A free society is not an Open Society, but one fully dedicated to a distinctive set of beliefs."[6] In 1951, Polanyi observed that "freedom of thought" and of conduct are deprived of their purpose, and eventually of their existence, when "reason and morality" cease being accepted "as a force in their own right."[7] Citizens of Polanyi's free society recognize truth, justice, beauty as transcendent ideal ends. They are ends whose existence and value cannot be proven, their reality (which is spiritual) having to be accepted on faith, as the presupposition of a tradition of belief and practice.[8] Attempts at rationally establishing ideal ends, and at showing that they should be sought are, for Polanyi, inimical in leading to skepticism about, and eventual renunciation of, the ends. Knowledge of the ideals is sought for its own sake, not for practical benefits that might ensue. Representing "a true end in itself," Polanyi's liberal society is freely believed in and committed to, its ideal ends being explored by free agents.[9]

The authority of the government is restricted in its scope, permitting citizens ample opportunity to exercise independence in their pursuits. The motive force of these independent efforts is an obligation that agents put themselves under to seek the ideals, exercising the distinctive freedom –"<u>public</u> liberty"- of Polanyi's society.[10] Public liberty Polanyi distinguishes from "private liberty." Private (personal) freedom is, Polanyi explains, "the desire to be left alone," having no defined purpose since "that would limit the freedom which is wanted." This is "irresponsible" freedom, being understood as "a personal right of the individual."[11] Public liberty exists in "<u>spontaneous</u>" or "dynamic" orders (e.g. scientific research, common law, academic scholarship), agents having independence to act on their own "initiative[,] …judgment" and "conviction," serving the ideals of their spontaneous order and of the free society.[12] Truth, justice and the other ideal ends are, Polanyi explains, intensively cultivated in these "spontaneous orders" of cultural activity. Motivated by their love of truth, scientists and scholars increase knowledge of the ideal of truth, the creativity and works of accomplished artists reveal more of the ideal of beauty, justice is disclosed in legal improvements (e.g. "humanization of the criminal law and of the prison system"), and our grasp of the ethical ideals of good and right becomes firmer in light of morally enlightened reforms.[13] Independent initiatives and judgments in the service of a common ideal in systems of spontaneous coordination form the most salient feature of Polanyi's free society. Polanyi envisages the knowledge of traditional ideals, intensively achieved through free cultural activities in diverse fields, as expressing varieties of excellence that diffuse through the free society, affecting the sensibilities, aspirations and activities of its citizens.[14]

An inclusive free society is, for Polanyi, greater than the sum of its spontaneous cultural orders of trained specialists. Polanyi's explanation of this point bears quoting at length:

> to comply with a code of morality, custom and law, is to live by it in a far more comprehensive sense than is involved in observing certain scientific and artistic standards. Moral rules are therefore an instrument of civic power in the hands of those who administer moral culture, and morality is allied to custom and law. Men form a society to the extent to which their lives are ordered by the same morality, custom and law, which jointly constitute the morés of their society. We recognize here an important division in the administration of social lore. For we see that while some systems of social lore are cultivated for the sake of our intellectual life as individuals, others are cultivated by the act of ordering our lives socially in accordance with them. The first is a social fostering of essentially <u>individual</u> thought, the second an

administration of society in accordance with essentially <u>civic</u> thought."[15]

The Polanyian free society has its <u>formulated</u> understanding of, and formulated limits on, freedom, these formulations being found in constitutional law, rights, statute laws, maxims, theories, principles, and the teachings and ideas of its revered figures.[16] Formulations of freedom, Polanyi regards as constituting the free society's <u>lore</u> of freedom, its articulate heritage.[17] Lore by itself, Polanyi impresses on us, cannot engender (but may endanger) free conduct.[18]

Freedom Embodied In A Tradition of Knowledge-In-Practice

The liberal <u>tradition</u> of a free society, Polanyi distinguishes from the society's <u>lore</u> of freedom. Each free society has produced its own distinctive variant of the tradition. In Polanyi's typification of it, the free society depends on its citizens respecting the lore, and on them willingly participating in the tradition, of freedom. Liberal lore, as formulated understandings, experiences and records of freedom, is explicitly presented to members of each new generation as they grow up in, and learn to enact, the tradition.

With elements that include presuppositions, habitudes, maxims, values and standards, Polanyi's tradition of freedom accustoms its adherents to think and act along certain lines. The tradition is actualized by enactments of it, which are <u>freedom realized</u>.[19] Enactments of the liberal tradition represent, for Polanyi, the <u>ground of</u> the explicit dimension (lore) of society's freedom and of its free institutions. Enactments of the tradition provide experience that informs the interpretation, elaboration, and revision of lore. Polanyian lore and tradition are complementary.

In *Personal Knowledge*, Polanyi illustrates these two dimensions of freedom with the following historical example:

> In the course of the seventeenth and eighteenth centuries British public life developed a political art [tradition] and a political doctrine [lore]. The art which embodied the exercise of public liberties was naturally unspecifiable, the doctrines of political liberty were maxims of this art which could be properly understood only by those skilled in the art … When the French Revolutionaries acted on this doctrine, which was meaningless without a knowledge of its application in practice, Burke opposed them by a traditionalist conception of a free society.[20]

For Polanyi, freedom is stabilized by the "traditional practice [of,] and [mute] wisdom" regarding, freedom. Having a presuppositional faith "in the power of thought" and committed to cultivating thought, citizens of the free society imbue freedom with significance and value.[21] Polanyi envisages the express interpretation and understanding of freedom as accompanying, and distilling the practice and wisdom of, the tradition of freedom.

For Polanyi, freedom exists in concrete form in the ways that agents in a free society discuss matters and conduct themselves. Freedom in its traditional dimension is the skilled art by which individuals act independently and responsibly, relying on the resources of the tradition and lore to inform their initiatives as they act within guidelines set down by the law.[22] Polanyi views the adherent of the tradition of freedom – the "art of conducting free activities" – as participating in it in virtue of his possessing a type of "practical wisdom."[23] Enactments of the tradition represent a flow of filiations, exemplifying and sustaining free thought and free conduct. The adherent, Polanyi suggests, <u>knows how</u> to exercise freedom based on his dedication to "premises,"

including fundamental assumptions of "fairness," "tolerance" and truth.[24] As envisaged by Polanyi, agents in, and of, the tradition give effect to a supposition that, possessing reason and conscience, people avail themselves of "the ordinary practice of objectivity in establishing facts and of fairness in passing judgment in individual cases" for the purpose of conciliating their disagreements.[25] Emotionally attached to the tradition, the Polanyian liberal exercises freedom according to "unspoken rules of freedom," values, and standards for allocating value.[26] No description that an agent gives of these elements can capture the tradition's inherited complex content. Polanyi explains, "the love of truth and confidence in their fellows' truthfulness are not effectively embraced by people in the form of a theory." This love and confidence do not "even form the articles of any professed faith, but are embodied mainly in the practice of an art – the art of free discussion – of which they form the premises."[27] Engaged in the traditional art of freedom, Polanyi's liberal exercises unspecifiable skills in making informed intuitive judgments, discriminations and deliberated choices. The agent draws on his experience and discernment in seeking to conform his conduct to the requirements of lore and to the tradition's rules and standards. Using the "tacit knowledge" that he has acquired of these things from having assimilated and acted in the tradition of freedom, he judges which laws and rules are relevant in particular situations, the actions they permit and those they disallow. The agent knows how to comply with, and how to apply, many laws and informal rules of liberal life. He is aware of the language of numerous laws and other explicit elements of liberal lore, but his interpretation of these, and of the unformulated rules of tradition, relies on tacit knowledge. For Polanyi, liberal lore and liberal tradition come together, complement and affect each other, through the conduct of individual agents and the discussions they have with one another.[28]

In his attempts at realizing the values, and measuring up to the standards of value, of the liberal tradition, the agent wrestles with problems, each of which is in some respects unprecedented. He, interprets, extends and applies the tradition in his personally nuanced way; Polanyi views this as contributing to the creative renewal of the liberal tradition.[29] The effort involved at living up to standards is, for Polanyi, particularly apparent when agents have conflicting demands to reconcile: "Everywhere in the world there are people who are trusted by their fellowmen [sic.] to tell the truth or to be fair; there are consciences touched by compassion, struggling against the ties of comfort or the callousness born of harsh custom. Our lives are full of such conflicts. Wherever these contacts are made with spiritual obligations, there is an opportunity for asserting liberty …A nation whose citizens are sensitive to the claims of conscience and are not afraid to follow them, is a free nation."[30]

Being largely unformulatable and the object of tacit knowledge, tradition can, in Polanyi's account, be passed on only by way of example, directly and personally by adepts to neophytes. This is the liberal tradition's mode of transmission. Seeds of the tradition are sown in the minds of the young, germinating as inclinations to think, feel and act along particular lines. For Polanyi, the young become indentured as "apprentices" to masters, these "elders" being accomplished in the practice of the tradition, their words and deeds providing the young with exemplars to emulate.[31] Listening to the language of freedom being spoken, and observing the ways in which free citizens act in various situations, the young - assimilating and imitating – become the next generation of participants in, contributors to, and custodians of, the primary tradition of a free society. Polanyi explains that, as a part of the knowledge-in-practice they develop in their apprenticeship, agents form a personal appreciation of how to exercise freedom according to the "unspoken rules of freedom," applying this practical knowledge as they participate in the life of the liberal society.[32]

Polanyi understands the tradition of freedom to "correlate" with an authority.[33] As with other traditions of practice, that of freedom has authority over its adherents, being valued by them. Practitioners of freedom conform to requirements of the tradition, believing it to be right for them to so do. From the time he began learning

the tradition of freedom, the agent has <u>submitted to its authority</u>. Invoking St. Augustine's words of the fourth century A.D., "*nisi credideritis, non intelligitis*," Polanyi writes that the "learner …must believe before he can know."[34] The young person has to commit himself to a lore and tradition in order to learn them; emotional commitment is the motive force that sustains his learning.[35] In this context, Polanyi implies a distinction between the liberal tradition as a <u>mediate</u> object of submission and – the <u>immediate</u> object - significant others who embody the tradition.[36] The significant others include parents, relatives, teachers and clergy who have the "confidence" of, and whose <u>authority</u> is accepted by, the young.[37] As explained by Polanyi, the youthful apprentice submits through a tacit act of personal "surrender" to being habituated to the practice of liberty, accepting that the superior knowledge of practitioners of the tradition-in-practice is a valid source for his own "standards" and "deeds."[38]

Polanyi describes the act of "surrender" to the liberal tradition as "a-critical," rather than "uncritical."[39] An adherent cannot criticize the tradition, having accepted its ideas, values and standards on faith. Explains Polanyi, "no intelligence, however critical or original, can operate outside …a fiduciary framework," and "we cannot look at our standards in the process of using them."[40] Moreover, unformulated tacit knowledge – important as a dimension of the liberal tradition – is not an object of awareness nor one of critical examination.

Arguing that critical intelligence can be exercised only within, but not on, "a fiduciary framework," Polanyi denies neither the possibility nor desirability of <u>lore</u> that has been <u>formulated</u> within a framework being critically assessed.[41] And it is possible to criticize frameworks other than, but on the basis of, one's own, says Polanyi. Submission to authority ("dogmatic orthodoxy") can, according to Polanyi, "be kept in check both internally and externally;" a system of belief evolving as its formulated propositions are challenged.[42] In regard to science, Polanyi makes the point that discoveries may be encouraged by a sense that "the existing framework of science" is incomplete or else "by the opposite feeling that there is far more implied in …[the framework] than has yet been realized."[43] There is, for Polanyi, no criterion on which agents can decide as to when critical doubt may prove to be beneficial to science, as there is none in respect of liberalism. New discoveries and solutions impact on traditions, being a source of new or revised ideals, standards, and rules.

In a free society, as viewed by Polanyi, freedom possesses "<u>political and moral authority</u>." [44] What he has in mind here is, not the abstract idea of freedom nor explicit rules of the political constitution but, the tradition of freedom, and more particularly its tacit knowledge, enabling free citizens to participate in the "practice of freedom," assign meaning to formulated "liberal principles," and to interpret the constitution. [45] "All forms of freedom, such as self-government, the rule of law, and tolerance of religious and irreligious convictions, are sustained by …[the] authority" of this tradition of knowledge-in-practice.[46] So long as members of a free society willingly participate in the liberal tradition, "free institutions" can function, there being "no power [that] can enforce such spontaneous collaboration."[47]

Popper's Understanding Of Tradition

Popper underlines the importance of tradition in social life when he implicitly agrees with Hegel and Hegelians (probably the one and only occasion on which he does agree with them) that we greatly depend on "our social heritage."[48] Popper's traditions are uniformities of agents' "attitudes, …or aims or values, or tastes," or actions, that are "handed on."[49] Any one, or any combination, of these types of "handed on" uniformities may constitute a tradition for Popper. His understanding of tradition is broad, including what some commentators might prefer to describe as customs or as personal habits, as for example "wear[ing] my watch on my left wrist."[50] Popper's traditions are distinguishable between three kinds: traditions predominantly of practice ("<u>acting</u> under

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the influence of a tradition"[51]), predominantly of thought (e.g., philosophy), or composites of these two (e.g., the tradition of science).

The inner core of many, and of perhaps most, Popperian traditions consists in agents' <u>subjective states and dispositions</u> as generative mechanisms of social actions, the dispositions and their corresponding actions being fostered by the present generation of adherents in the next generation. Popper posits that "traditions are perhaps more closely bound up with persons and their <u>likes and dislikes</u>, their <u>hopes and fears</u>, than are institutions."[52] Typically he sees traditions as existing on a level between individuals and institutions. Popper's examples of traditions include "the burning <u>interest</u> in scientific research, or the scientist's critical attitude, or the <u>attitude</u> of tolerance, or the intolerance of the traditionalist – or for that matter, of the rationalist."[53]

Popper's traditions are <u>social</u> in the sense that numbers of people behave conformably to one another, or else <u>share</u> an attitude, taste, or value, contributing to what he describes as the "atmosphere" of a social institution (e.g. a factory, orchestra, scientific research) or society. They are also social in respect of their being spread and transmitted by "<u>imitation</u>."[54]

<u>Rationalism</u>, highly prominent in Popper's account, is first and foremost an <u>attitude</u>-tradition, diffusing by way of its adherents' speech and actions, disposing them to support democracy and humanitarian values.[55] At the heart of Popper's rationalist tradition is the "critical attitude;" science being the purest exemplification of this attitudinal tradition.[56] The scientific tradition is constituted for Popper by "first order theories [that are] handed on," accompanied by a "second order" <u>critical attitude</u>.[57] Through its critical attitude, the scientific tradition disposes adherents to act in given ways: performing experiments, clearly formulating theories and arguments, being honest, seeking the truth, etc.

Rationality Of Traditions

Popper observes that "anti-rationalist" social and political theorists deny that tradition is susceptible to rational explanation, and they insist that tradition has to be accepted "as something just given."[58] Popper looks on Edmund Burke as the most important exponent of the idea that tradition represents an "irrational power" in social life, and rationalists, so far as Popper is concerned, have never properly countered Burke's interpretation.[59] He notes that rationalists have been dismissive of tradition, characterizing their attitude as: "'I am not interested in tradition. I want to judge everything on its own merits; I want to find out its merits and demerits, and I want to do this quite independently of any tradition. I want to judge it with my own brain, and not with the brains of other people who lived long ago.'"[60] It has not dawned on these rationalists, Popper suggests, that they themselves belong to a tradition – triumphalist Enlightenment rationalism – by which they are disposed to adopt this haughty attitude to tradition. A more recent expression of the "anti-rationalist reaction" Popper found expressed in Michael Oakeshott's "Rationalism in Politics" (1947). The fact that Oakeshott's "powerful" critique awaited a proper answer helped motivate Popper to investigate the subject of tradition.

One begins to see from the foregoing remarks that adherents' <u>relations</u> to traditions differ markedly between the account given by Popper and that by Polanyi. <u>Relation to</u> a tradition is a key feature for Popper. Popper distinguishes between "two main attitudes" that agents can adopt toward a tradition. An agent may accept a tradition <u>uncritically</u>, and will do so <u>unavoidably</u> if she happens to be unaware that she follows it, in which case the tradition amounts to a "taboo."[61]   In this vein, Popper refers to "prejudices" being held unconsciously.[62]   (Another possibility is that agents may <u>reject</u> a tradition <u>un</u>critically, including those

rationalists whom I described above as adopting a "haughty" attitude to traditions.) Popper's rationalists have a critical attitude toward their tradition. "Rational," "critical," and "scientific" are indiscriminately interchanged by Popper in his "Toward a Rational Theory of Tradition" article. Popper describes rationalists as prepared "to challenge and to criticize everything", meaning they "will not submit blindly to any tradition" of which they are aware.[63] Popper's rationalists appreciate that they need to be conversant with traditions before critically considering them. This includes the rationalist and the evaluation of his own tradition. According to Popper, having made a faith commitment to rationalism, the rationalist uses reasoned argument to test the tradition.[64] In due course, the rationalist will accept or reject all, or else some ("in a compromise"), of the rationalist tradition on the basis of his critical assessment of it in relation to its expected effects and, should it be decided this is the best thing to do in the circumstances, he will set about finding or inventing a superior tradition.[65]

For him to count his theory of tradition as rational – construction of such a theory being the express object of his article - Popper requires that it serve the major purpose of theoretical social science which is, in his understanding, to explain why consequences of actions that are unintended and unwanted "cannot be eliminated," the explanation to be given in individualist terms (actions, relations, beliefs, etc. of individuals).[66] It is, Popper elaborates, "especially, the task of the social sciences to analyse …the existence and the functioning of" social objects with reference to people's actions and the unintended social consequences of those actions.[67] There are two problems that Popper intends his theory of tradition to solve.

Problem 1: Applying his view of social science to social traditions, Popper identifies among "the problems" to be solved by a rational theory of tradition that of explaining how traditions originate, develop and, particularly, "how …they persist - as the (possibly unintended) consequences" of actions.[68]

Problem 2: Popper considers that the principal problem for a rational theory of tradition to solve is explaining whether tradition has a "function …in social life" and, if so, what it is.[69] This suggests Popper's primary interest lies in presenting, not so much a rational theory of tradition (a theory relying on experience, argument, criticism) as, a theory of tradition as rational, showing it has a rational role to play (function) in social life. Answering this question, Popper would go some way toward answering his first problem, explaining how traditions "persist." Popper illuminates the social function of traditions by analogizing them to theories in natural science.

Pertinent to what is being distinguished here as Problem 1, Popper says that traditions may originate from "imitation." Popper notices that people (particularly "primitive peoples and children) …cling to" uniformities in conduct and in the form of received ideas (myths). Popper sees people as fastening on to uniformities because they fear change and/or because they seek to convince others "of their rationality or predictability, perhaps" wanting them to follow suit. "This is" for Popper "how traditional taboos arise and how they are handed on."[70]

So far as the origin of science is concerned, Popper traces it to the invention of the critical attitude, its application to accepted myths, and the use of language for formulating and criticizing myths.[71] Science arises from the confluence of these three traditions. Part of Popper's explanation of what we have distinguished as Problem 1, particularly as it regards the persistence of traditions, is that they are handed on to successive generations. For example, the scientist cannot commence research *de novo*, Popper contends, but "must make use of" his predecessors' work and accomplishments, maintaining "a certain tradition."[72] Scientific knowledge advances, in Popper's account, not by accumulation but, by leaps that are revolutionary without being destructive of the tradition. The development of traditions is, Popper implies, by way of criticism, "weighing their

merits against their demerits."[73]   He considers that the critical assessment of social traditions, and the replacement of them with new traditions that are expected to be superior, is a process that depends on, and proceeds within, "a framework of social traditions."[74]

A social theory of tradition is further called on by Popper to explain whether tradition (in general) has a "function …in social life" and, if so, what the function is (distinguished above as Problem 2).[75] Popper is wondering whether traditions generally have a common function (as distinct from whether specific traditions have particular functions). Popper's solution to this problem rests on his recognition of a broad "parallel" between scientific (and certain other critically examined) theories and social "traditions in general." [76] The similarity is that critically assessed theories of science help us "to orientate ourselves in …[the natural] world" and social traditions "help us to orientate ourselves, especially in the social world." This in essence is Popper's view of the general function of social tradition.[77]

Popper's argument for his solution of Problem 2 relies on five pieces of support.

First, he advises of a need (general condition) of social life, being regularities in the social environment that enable agents to make successful predictions. "Social life can exist only if" its agents "know, and …have confidence, that there are things and events which must be so and cannot be otherwise," explains Popper.[78]

Second, explaining why it is that social life depends on agents making successful social predictions, Popper affirms that people experience psychological disturbance when either the natural or the social environments are unknown to, and unpredictable by, them. Writes Popper, "we should be anxious, terrified, and frustrated, and we could not live in the social world, did it not contain a …great number of regularities to which we can adjust ourselves."[79]

Third, why does Popper believe that psychological disturbance results (and social life is impossible) when agents cannot make successful social predictions? His bedrock explanation is that without predictability "there is no possibility of [agents] reacting rationally."[80] Being able to confidently predict that Smith the pharmacist will provide me with the medication that my doctor has prescribed for my bronchial condition, rather than a drug for some entirely different condition, or a placebo, or poison, I can act rationally in making my purchase and taking the medication. For predictions of this sort to be made, and confirmed, Popper reasons, a society must have its regularities, imparting order to social life. (Gilbert Murray truly wrote of "that intricate web of normal expectation which forms the very essence of human society [but which if frequently] torn …by continued disappointment [means] that at last there ceases to be any normal expectation at all."[81])

Fourth, Popper considers that institutions and traditions are important among the stabilizations of social life, providing people with "a clear idea of what to expect and how to proceed."[82] They are among the regularities that impart structure to social life.[83] (Institutions are compared by Popper with traditions in terms of assisting their members [and others] to form reliable predictive knowledge of "what to expect" and assisting them to decide how best "to proceed."[84])

A fifth aspect of Popper's solution to Problem 2 of explaining tradition, concerns what might be termed the specific functionality of traditions. Besides being regularities in social life and contributing to its predictability (general function), traditions, according to Popper, may be specifically functional for particular institutions. Among the effects that Popper regards institutions as having in society are ones that he describes as "prima facie"

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or "proper" functions (e.g. diffusing knowledge, maintaining order, keeping people fed and clothed), being socially beneficial effects that institutions have been constructed (or discovered) to produce.[85] Popper believes that institutions are "ambivalent" in that their members may choose to behave deviantly, diverting their institutions away from their "proper"/"prima facie" function(s).[86] Among his illustrative examples, the police, whose proper/prima facie function is to protect the citizenry from crime, can become an agent of crime, and a parliamentary Opposition, whose proper/prima facie functions include exposing government corruption, may cooperate with a government in practicing corruption.[87]

As a part of their specific functional contribution (relating to institutions), and as a part of their general functionality (enhancing the predictability of social life), Popper sees traditions – mediate between agents and institutions – offsetting the ambivalence of institutions by encouraging members of institutions to respect and enact their appointed roles, enabling the institutions to perform their proper functions. He cites the social institution of language as having description and argument for its "characteristically human functions."[88] In its descriptive function, language is, Popper proposes, "a vehicle of truth," which function depends for its discharge on a tradition that is favorable to it, and that is unfavorable to language being misused to spread false information.[89] The argumentative function of language depends on tradition to counteract the ambivalence of this function, being "the critical tradition" (or "tradition of reason") that encourages "clear speaking and clear thinking" while discouraging people from misusing language to present "pseudo-arguments and propaganda."[90]

Traditions also are "ambivalent," Popper believes, but they are less corruptible than are institutions because the "character" of traditions "is less instrumental than that of institutions," and traditions are almost as "impersonal as institutions."[91] (Referring to the "impersonal" nature of these social objects, Popper would appear to mean that typically one cannot enumerate each of the concrete particular persons belonging to them at any given time; and by referring to them as more "instrumental" than traditions, Popper suggests that institutions more directly promote some definite end or value. "It is tradition which gives the persons (who come and go [in an institution]) that background and that certainty of purpose which [enable the persons to] resist corruption."[92])

Rationalism And Liberal Democracy

Polanyi, we noted, discusses the tradition of liberty as a vital element in the life of a free society. In Popper's open society, the traditions of fundamental importance are critical rationalism and humanitarianism (humanitarian values). Critical rationalism - science's tradition of criticism (the "second order" tradition of science) "writ large"[93] - is the tradition on which Popper's account of the open (liberal democratic) society turns, with its choice being deemed by Popper as quite likely "the most fundamental" of all moral decisions.[94] Popper highlights the importance he places on reason/rationality, and on the commitment to it ("critical rationalism"), when he paraphrases, with obvious approval, what he understands to have been Socrates' view that "it is your reason that makes you human; …that makes you a self-sufficient individual and entitles you to claim that you are an end in yourself."[95]

The open society's rationalism is "critical" ("true") rationalism, as opposed to "uncritical" or "comprehensive" rationalism which, its followers suppose, requires no underlying faith commitment but which Popper dismisses as "inconsistent."[96] Critical rationalism emphasizes "argument and experience," tries "to take

argument seriously," and proposes that "'I may be wrong and you may be right, and by an effort we may get nearer to the truth,'" encouraging responsiveness to criticism.[97] It is a Socratic rationalism, with agents aware of their "intellectual limitations."[98] Popper notes that the rationalist attitude ("reasonableness") is very similar to "the scientific attitude," with truth seeking and objectivity being understood as cooperative ventures.[99]

Explains Popper, critical rationalism cannot be "established" or "<u>determined</u>" by argument, although a decision regarding it can be "<u>helped</u>" by argument.[100] In the first instance, Popper believes, the adoption of rationalism must be as a tentative, "irrational <u>faith in reason</u>."[101] The decision to prefer critical rationalism need not be blind. Popper's agent returns to reappraise his initial decision after having traced out the respective "consequences" or "tendencies" of critical rationalism and, its "alternative," irrationalism, being the two main possible objects of choice in this situation.[102] Popper explains that although consequences cannot determine the decision – agents have to decide in light of their conscience but conscience is not determining – they can "influence" ("induce" or "help") it.[103] The sum value of the consequences of critical rationalism is, for Popper, such as to confirm the rationalist's initial faith commitment to it.

Popper's view of the initial adoption of this tradition – as faith commitment – is akin to Polanyi's account of the adoption of the tradition of freedom by way of an act of faith. A difference is that Popper's agent engages in a *rational assessment* to ascertain that it is the "right faith."[104] Popper's agent is sufficiently able to detach himself from his tradition as to deliberate on its consequences and those of irrationalism, deciding between them in light of this analysis of their consequences, and of his conscience.

The consequences that assist an agent to decide in favor of critical rationalism Popper refers to as "humanitarianism," and he also sees this position as resting on a faith commitment, being referred to by him as a "religion."[105] Humanitarianism, for Popper, includes democracy, equality/impartiality (with particular reference to political relations, and settlement of conflicts by discussion and compromise rather than by violence), tolerance, freedom, piecemeal social engineering, the unity of humanity as opposed to tribalism, individualism as an ontology and as an "ultimate [ethical] concern" as opposed to collectivism, alleviation of misery and eschewing the maximization of happiness as a false ideal for social-political reform.[106]

Review Of The Theories

The two theories can now be critically compared.

Contents

Polanyi and Popper differ as to how they understand the <u>contents</u> of traditions. The core of critical rationalism as Popper's paradigmatic tradition – a meta-tradition applicable to other traditions – consists in an attitude of willingness to criticize theories and social objects (traditions, and institutions). (Popper requires that criticism be tempered with the degree of dogmatism that enables an agent to properly understand a position and appreciate its strengths.) Popper suggests that the mere holding of the attitude is insufficient to constitute the tradition, which also has to be <u>expressed</u> in word or deed appropriate to circumstances.

Polanyi's liberal tradition consists in a body of cognitive-practical skills that has been transmitted to agents, become embodied in their conduct, and which they will transmit to the next generation. Like scientific research and other traditions of skill, Polanyi's liberal tradition is transmitted by direct contact, with "apprentices"

observing and emulating "craftsmen." Such traditions occur only "in closely circumscribed local traditions," or in countries to which craftsmen have migrated and recommenced their practice.[107] This fact would help to explain why the liberal tradition has proven so difficult to establish beyond Britain, the US, and a handful of countries of Continental Europe and the British Commonwealth. Polanyi delves into the process of transmission, regarding it as an essential feature of tradition, whereas Popper offers only the basic idea that tradition is transmitted by imitation. Polanyi's tradition of freedom consists in an array of nuanced craft skills (intuitions, discriminations, judgments, capacities) and activities. Informing the conduct (knowledge-in-practice) of members of a free society, Polanyi's tradition of freedom represents a work in progress, being altered by its enactments. It exemplifies what Oakeshott referred to as "a concrete coherent manner of living in all its intricateness."[108]

Tradition And Social Ontology

Polanyi envisages science, common law and Protestant denominations as spontaneous orders (rather than as institutions), being a distinctive feature of his free society. Polanyi's spontaneous orders are horizontal, and consist in large numbers of freely moving parts, being unlike institutions with their hierarchies of superiors and subordinates. Language and science Polanyi takes to be spontaneous orders, whereas Popper construes language as an institution ("controlled by persons"), and science he suggests is an institution compounded of many others (institutions).[109]

Popper's traditions are distinct from institutions, being applied to them, and assisting members to serve their institutions' "proper" functions. Popper describes traditions as existing between persons and institutions, referring to "a uniformity of people's attitudes" etc., and being "more closely bound up with persons and their likes and dislikes …than are institutions."[110]

Polanyi's tradition of freedom does not exist separately from, and is not applied to, his free society with its component spontaneous orders and institutions. It exists within, as a sustaining principle of, these objects. The tradition consists largely in the form of tacit knowledge, being actualized in adherents' skilful enactments of its principles, maxims, standards. Polanyi's liberal tradition is acquired by apprentices from masters as an art of skilled interpretation, judgment and conduct. Enactment of the tradition, as with scientific research and other traditions, involves intuitive knowledge of standards, morés, values, delicate discriminations, complex interpretations, and subtle judgments of which agents are largely unaware and are unable to formulate in detail.[111]

According to Polanyi, tacit knowledge is an essential element of the liberal tradition. Popper, in contrast with Polanyi, is a characteristically modern philosopher for whom rationality concerns propositions that "admit of explicit formulation" being subjected to "the requirements of …[the proper] epistemological method."[112] The fundamental role of tacit knowledge in social life has been well covered by James Scott in his book, *Seeing Like a State*. Scott argues that formulated rules and knowledge are insufficient for social groups to be viable, with initiatives, skills, "informal understandings and improvisations" having to be included. These implicit "forms of knowledge embedded in local experience" Scott distinguishes as "metis,"[113] the gist of which consists in agents "knowing how and when to apply …[relevant] rules of thumb in a concrete situation."[114] Metis is socialized by way of a lengthy "apprenticeship", relying on practice and conservation of skills. Scott's analysis resonates with that of Polanyi.[115]

Instrumentally Valuable Or Self-Justifying?

Popper's choice of title is not properly reflective of his principal aim for his article. Popper's purpose is seen as twofold by the present author, being to explain tradition by way of <u>a theory</u> that <u>is rational</u>, and – the more important aim, not clearly reflected by the title, "Toward a Rational Theory of Tradition" - to produce a theory that shows <u>tradition to be rational</u>. His article would have been more accurately titled, "Toward a theory of rational tradition." <u>A rational theory</u> of the subject is, for Popper, one that is tractable by criticism. In regard to the other aim – producing a theory of <u>tradition as rational</u> – Popper's point is <u>substantive</u>, affirming tradition to be a rational element in social life, making an <u>instrumentally valuable</u> contribution to the activities and lives of people. This in other words is Popper's argument that tradition is <u>functional</u> for society, consisting in a type of regularity that helps to make social life more ordered and predictable for agents (general function), and in traditions assisting social institutions to perform their proper/<u>prima facie</u> functions (institutional function).[116]

Whereas Popper chiefly studies traditions as <u>rational</u> instruments, serving institutional or broad social functions, Polanyi is interested in the nature of traditions and the meaning they have for agents, being value that is immanent in the tradition.[117] Polanyi's tradition of freedom is the context in which practitioners of cultural disciplines seek and make discoveries about the nature of spiritual ideals. The view of traditions as possessed of immanent value and meaning one also finds expressed in Michael Oakeshott's writings, traditions being valued for their own sake, not because they serve goods that exist extrinsically to the traditions. In the same spirit as these thinkers, Anthony O'Hear suggests that "A very great deal of the meaning [significance] we as human beings find and the satisfaction we take in our activities and traditions …has little to do with their efficiency or ability to subserve ends aside from what is involved in engaging in the activities."[118]

Agents in Polanyi's liberal tradition are not acting with a view to serving social functions. They embody resources of the tradition in their activities, dealing with contingencies and difficulties as they arise. Polanyi envisages rationality as <u>internal</u> to the tradition of freedom, and to traditions that flourish in a free society (science, justice, etc.), being defined by standards that are laid down in the tradition. It is not instrumental rationality. Liberalism, science, common law and traditions of many other spontaneous orders, Polanyi depicts as spiritual and describes as "self-purposive."[119] These activities, conducted for their own sake, agents deem to be important and valuable in themselves, John Casey maintaining that institutions, traditions and the like are "things in themselves …[or] ends" and to judge them instrumentally is "inappropriate."[120]

Criticizability

Popper underscores criticism of dogma and Polanyi underscores dogma as submission to authority. Popper's pre-eminent tradition – rationalism – is one of criticism. Popper envisages criticism (rationalism) as a comprehensive tradition, applicable to theories, policies, institutions, and traditions, all of them being objects "that we can criticize and change."[121] Popper's traditions are rationally held when they have been criticized and have coped well with criticism. An underlying assumption of Popper's support of criticism of traditions is that they can be rationally discarded and replaced with new traditions, Popper comparing the process to the creation of laws.[122] There are thinkers who would question Popper's idea that traditions are objects of planning and of deliberate creation. Popper sheds no light on how traditions can be made, but he suggests it is not straightforward, citing that to establish a tradition of research can involve a "real struggle" and be a "very hard thing to bring about."[123]

To the question of whether he regards the tradition of freedom (and other traditions) as being <u>criticizable</u>, Polanyi suggests a complex answer. Some of the content of a tradition that has been formulated, particularly its associated lore, can be criticized, according to Polanyi, but not its "fundamental beliefs." He quotes J. S. Mill's argument for cognitive "fallibility" in *On Liberty* that "The beliefs which we have most warrant for have no safeguard to rest on, but a standing invitation to the whole world to prove them unfounded."[124] The presuppositions of liberalism are, Polanyi writes, along with all other "fundamental beliefs[,] irrefutable as well as unprovable. The test of proof or disproof is …irrelevant for the acceptance or rejection of fundamental beliefs." Even the "admission of our fallibility only serves to reaffirm our claim to a fictitious standard of intellectual integrity."[125]

A further aspect of this topic concerns Polanyi's views on the <u>authority</u> of tradition. Adherents, as described by Polanyi, "indwell" the tradition, submitting to its authority, assimilating, and relying on, it. Being dwelled in, a tradition cannot be externalized by its adherents which, with the tacit dimension, makes it doubly difficult for them to criticize the tradition. This does not prevent agents from becoming dissatisfied with practices in a tradition, Polanyi suggests, and new practices evolve that seem better adapted to problems at hand. The tradition changes as it is employed in new situations, encountering problems that are unprecedented.

The Popperian believes traditions can be compared with one another, as for example the traditions of critical rationalism and irrationalism, or of Marxism with the tradition of the open society and humanitarian values. The critical comparison is conducted instrumentally, with reference to the (un)desirability of their envisaged effects. Popper considers that, after being adopted on faith, traditions have to be assessed and, coping well with criticism, they are held rationally. Polanyi agrees that people reject traditions and take up new ones, citing St. Augustine's embrace of Christianity as a paradigm case. But such changes cannot be effected by reason alone, Polanyi contends; emotion and faith also become involved, with the change itself amounting to a "conversion." Discussion in *Personal Knowledge* of controversies between supporters of different frameworks and traditions (e.g. liberalism versus Marxism) indicates that, for Polanyi, these controversies cannot be mediated on neutral grounds. There are no "fixed external criteria" of truth and validity, and agents have to "accredit" their "own judgment as the paramount arbiter of all …[their] intellectual performances."[126] Criticism of a tradition must be external, according to Polanyi, expressed by people who are not indwelling the tradition. Relativism, while explicitly rejected by Polanyi (as it is by Popper), is a position that his analysis of traditions and frameworks of belief would appear to imply, making the analysis unattractive in certain quarters.[127]

Two perspectives on social traditions have been presented in this article, Polanyi's paying particular attention to the perspective of participants <u>in</u>, and Popper's including more of the perspective of observers <u>of</u>, traditions. Popper's class of traditions overlaps that of Polanyi, but a good many of Popper's traditions – attitudes or values or practices (e.g. the way an orchestra performs classical compositions, the conduct of members of a police force, or of politicians of an opposition party) – look to be more specific than are Polanyi's traditions, with Popper's as the more populous class. Polanyi's view of traditions - the liberal tradition having been of particular interest to us - is deeper and richer than is Popper's view. Polanyi's view shines light on complexities of traditions that Popper's view ignores.

Endnotes

[1]Edward Shils argues in *Tradition* (Chicago: The University of Chicago Press, 1981), 101 n. 24 that

Popper and Polanyi were the first scholars to show that science has tradition among its vital principles. In fact, early in the 20th century, Pierre Duhem affirmed physics as having a "continous tradition" in his *The Aim and Structure of Physical Theory* (New York: Athenaeum, 1981), 32-33 (the first edition of this work having appeared in French in 1906).

[2]Karl Popper, *The Open Society and Its Enemies* (London: Routledge, 2002), xxxvi-xxxvii.

[3]Ibid., 761-762, n. 61; also 501, 704 n. 6, 714 n. 44.

[4]Michael Polanyi, "Foundations of Academic Freedom," (1947), reprinted in Polanyi, *The Logic of Liberty* (Chicago: The University of Chicago Press, 1951), 45.

[5]Michael Polanyi, *Personal Knowledge* (London: Routledge & Kegan Paul, 1958), 376.

[6]Michael Polanyi, "Preface," *Logic of Liberty*, vi.

[7]Michael Polanyi, "Perils of Inconsistency," *Logic of Liberty*, 107; also "Preface," v.

[8]Michael Polanyi, "Scientific Convictions," (1949), reprinted in *Logic of Liberty*, 30; see also "Perils of Inconsistency," *Logic of Liberty*, 106-109; for a similar view see Max Planck, *Where is Science Going?* (1932) (New York: AMS Press, 1977), 64.

[9]Polanyi, "Scientific Convictions," *Logic of Liberty*, 30; also Michael Polanyi, *Science, Faith and Society* (1946) (Chicago: The University of Chicago Press, 1964), 72-73; and Polanyi, *Personal Knowledge*, 377.

[10]Michael Polanyi, "Manageability of Social Tasks," *Logic of Liberty*, 158ff., 193.

[11]Michael Polanyi, "The Growth of Thought in Society," *Economica* 1941, Nov., 430.

[12]Ibid., 438.

[13]Polanyi, *Personal Knowledge*, 222.

[14]Ibid., 244, 376-377.

[15]Ibid., 215.

[16]Ibid., 374-380; also Michael Polanyi, "On Liberalism and Liberty," (1955), reprinted in Michael Polanyi, *Society, Economics & Philosophy,* Ed. with an introduction by R. T. Allen (New Brunswick: Transaction Publishers, 1997), 203ff.

[17]Polanyi, "Liberalism and Liberty," 203, 205. For Polanyi on social lore, and on "liberal orthodoxy" as a form of "articulate system" see *Personal Knowledge*, 174, 203ff., 215, 321, 375-77. Concerning Polanyi's lore/tradition distinction, see Struan Jacobs, "Polanyi on Tradition in Liberal Modernity," in *Emotion, Reason and Tradition*, Ed. with an introduction by Struan Jacobs and R. T. Allen (Aldershot: Ashgate, 2005), 69ff.

[18]On several occasions Polanyi opines that freedom is likely to be destroyed when speculative thinking proceeds unchecked, corroding commitments to tradition and "traditional ideals" with skepticism, and violence used to remake society. He cites the rationalist, anti-religious French Revolution, and the "nihilist skeptical" Communist revolutions and Fascist counter-revolutions of the twentieth century. See for example, Polanyi, "Liberalism and Liberty," 204-207, and "Perils of Inconsistency," *Logic of Liberty*, 93ff.

[19]"Whatever else a tradition is, it is a series of acts," writes D. M. Armstrong, "The Nature of Tradition," in *Liberty and Politics,* ed. Owen Harries (Rushcutters Bay: Pergamon Press, 1976), 8.

[20]Polanyi, *Personal Knowledge*, 54; also Polanyi, "Perils of Inconsistency," *Logic of Liberty*, 98ff.

[21]Polanyi, "Liberalism and Liberty," 205; also Polanyi, "Preface," and "Scientific Convictions," *Logic*

of Liberty, v and 23; Polanyi, *Personal Knowledge*, 216ff.

[22]Polanyi, *Science, Faith and Society*, 43; Michael Polanyi, "Planned Science," *Logic of Liberty*, 88ff.

[23]Polanyi, "Liberalism and Liberty," 203, 206.

[24] Polanyi, *Science, Faith and Society*, 67-68, 71, 76.

[25]Polanyi, "Scientific Convictions," *Logic of Liberty*, 29.

[26]Polanyi, "Liberalism and Liberty," 204; also Polanyi, *Science, Faith and Society*, 49, and for analogies with science see Polanyi, "Self-government of science," *Logic of Liberty*, 54-57.

[27]Polanyi, *Science, Faith and Society*, 71 emphasis added.

[28]Polanyi, "Lliberalism and Liberty," 203; also Polanyi, *Personal Knowledge*, 62, 207; and, regarding science, Polanyi, *Science, Faith and Society*, 45. R. T. Allen, *Beyond Liberalism* (New Brunswick: Transaction Publishers), 67ff.

[29]For analogical illumination of these points see Polanyi, *Science, Faith and Society*, 42ff.; Polanyi, "Foundations of Academic Freedom," *Logic of Liberty*, 44-45; Polanyi, *Personal Knowledge*, 170; Michael Polanyi and Harry Prosch, *Meaning* (Chicago: The University of Chicago Press, 1975), 61.

[30]Polanyi, "Foundations of Academic Freedom," *Logic of Liberty*, 45-46.

[31] Polanyi, "Liberalism and Liberty," 205; Polanyi, *Personal Knowledge*, 53ff.; and for analogies with science see Polanyi, *Science, Faith and Society*, 43-45; Polanyi, "Scientific Convictions," *Logic of Liberty*, 26ff.; Polanyi, "Self-Government in Science," *Logic of Liberty*, 52ff., 55ff.

[32]Polanyi, "On Liberalism and Liberty," 204, 207.

[33]Ibid., 203.

[34] Polanyi, *Personal Knowledge*, 266; also 207ff., 271, 375ff; see also Polanyi, *Science, Faith and Society*, 45; and Polanyi, "Managability of Social Tasks," *Logic of Liberty*, 193.

[35]Polanyi, *Science, Faith and Society*, 45; Richard Allen, "Some Implications of the Political Aspects of Personal Knowledge," *Tradition & Discovery* XXXIV, no.3 (2007-2008): 8

[36]Polanyi, *Personal Knowledge*, 271.

[37]Ibid., 208; also 53f., 207, 375-76.

[38]Ibid., 378, 380.

[39]Ibid., 378; also 208f. and 264.

[40]Ibid., 266 and 183.

[41]Ibid., 285, 272ff.

[42]Ibid., 268, also 285.

[43] Ibid., 277.

[44]Polanyi, "Liberalism and Liberty," 202-203 emphasis added; also Polanyi, *Science, Faith and Society*, 44-45.

[45]Ibid., 202-203.

[46]Ibid., 203.

[47]Ibid., 202.

[48]Popper, *Open Society*, 498.

[49]Karl Popper, "Towards a Rational Theory of Tradition," *Conjectures and Refutations*, 4th ed. rev.

(London: Routledge & Kegan Paul, 1972), 133, and 126.

[50]Ibid., 122.

[51]Ibid., 122 emphasis added.

[52]Ibid., 133 emphasis added.

[53]Ibid., 133, emphasis is added to highlight the importance of the psychological dimension in Popper's traditions.

[54]Ibid., 121-123, 134.

[55]Ibid., 122, 127, 134-135; Popper, *The Open Society*, 205ff., 497ff, 500ff, 512-513.

[56]Popper, "Rational Theory of Tradition," 122; *The Open Society*, 517.

[57]Popper, "Rational Theory of Tradition," 127.

[58]Ibid., 120.

[59]Ibid., 120.

[60]Ibid., 120-121.

[61]Ibid., 122.

[62]Popper, *The Open Society*, 492.

[63]P opper, "Rational Theory of Tradition," 122.

[64]Popper, *The Open Society*, 492, 519-520.

[65]Popper, "Rational Theory of Tradition," 122; Popper, *The Open Society*, 489, 492, 496ff.

[66]Popper, "Rational Theory of Tradition," 123-124; Popper, *The Open Society*, 787 n. 11.

[67]Ibid., 125.

[68]Ibid., 125, also 133.

[69]Ibid., 125 emphasis added.

[70]Ibid., 132, also 134.

[71]Ibid., 126, 130; Popper, *The Open Society*, 711 n. 38.

[72]Popper, "Rational Theory of Tradition," 129.

[73]Ibid., 132.

[74]I bid., 132.

[75]Ibid., 125 emphasis added.

[76]Ibid., 126, also 125; Popper, *The Open Society*, 499.

[77]Popper, "Rational Theory of Tradition," 126, also 131.

[78]Ibid., 130.

[79]Ibid., 130 emphasis added.

[80]Ibid., 130; also 131.

[81]Gilbert Murray, *The Rise of the Greek Epic* (Oxford: Clarendon Press, 1907), 55.

[82]Popper, "Rational Theory of Tradition," 130, also 131.

[83]Popper is aware that <u>traditions</u> also are ambivalent, and not always functional for social life, as with traditions of public officials taking bribes, of political extremism, and religious fanaticism.

[84]Popper, "Rational Theory of Tradition," 130, also 134.

[85]Ibid., 133.

[86]Ibid., 133.

[87]Ibid., 133.

[88]Ibid., 135.

[89]Ibid., 135; also *The Open Society*, 512, 767 n. 30.

[90]Ibid., 135; see also Max Black, *The Labyrinth of Language* (New York: Frederick A. Praeger, 1969), 27.

[91]Ibid., 134.

[92]Ibid., 134.

[93]In *The Open Society* (ignoring material that Popper added in editions other than the first (e.g. 711, n. 38)), so far as the present author can make out, Popper (496ff.) refers to rationalism in what may be termed synchronic fashion, as an "attitude" (also as a "creed" (507), "irrational decision" (824 n. 6; cf. 825 n. 8), and as a "faith" (515) involving conversion (515-516), rather than explicitly describing it (diachronically) as a tradition of transmission. But he strongly suggests in *The Open Society* (517; also 498-499, 501, 762) that he looks on rationalism as a tradition, and this is, of course, how he describes rationalism in the "Theory of Tradition" essay. For impressions of Popper on the history of rationalism in the West see *The Open Society*, 501, 517, 761-62 n. 61. Tradition also is involved in the critique of utopian engineering (dirigisme), and the defense of piecemeal engineering (reform) that Popper presents in *The Open Society*, as for example at 180-182. See also Popper, "Rational Theory of Tradition," 131-132.

[94]Popper, *The Open Society*, 506; also 504, 513, 517.

[95]Ibid., 207 emphasis added; cf. 519, 828 n. 10.

[96]Ibid., 499, 500, 502-504, 519, 824 n. 6, 825 n. 8.

[97]Ibid., 499, 510, 512-513, and 829 n. 19.

[98]Ibid., 695 n. 6, also 497, 499, 511, 714.

[99]Ibid., 497, 510.

[100]Ibid., 504, 505.

[101]Ibid., 503.

[102]Ibid., 505-506, 513.

[103]Ibid., 505-506, 510, 513, 519-520.

[104]Ibid., 519.

[105]Ibid., 513, 531-532, 780.

[106]Ibid., 507-512, 516-517, 519, 530, 591, 668-669, 697, 763, 770, 829 n. 18.

[107]Polanyi, *Personal Knowledge*, 53. Examples of such circumscribed "local traditions" are numerous, one being provided by Alan Watts, The Way of Zen (Harmondsworth: Pelican Books, 1962), 29 in regard to the transmission of performing Oriental music.

[108]Michael Oakeshott, "Rational Conduct," in *Rationalism in politics and other essays* (Indianapolis: Liberty Press, 1991), 119.

[109]Ian C. Jarvie, *The Republic of Science: The Emergence of Popper's Social View of Science 1935–1945* (Atlanta: Rodopi, 2001), 64.

[110]Popper, "Rational Theory of Tradition," 133-134.

[111]Polanyi, *Personal Knowledge*, 53.

[112]Mark T. Mitchell, "Michael Polanyi Alasdair MacIntyre, and the Role of Tradition," *Humanitas* 19, nos. 1 and 2 (2006): 120. See also John Flett, "Alasdair MacIntyre's Tradition-Constituted Enquiry in Polanyian Perspective," *Tradition & Discovery* 26, no. 2 (1999-2000), 6ff.

[113]James Scott, *Seeing Like a State* (New Haven: Yale University Press, 1998), 311. Another good guide on the subject is Ira J. Cohen, *Structuration Theory* (London: Macmillan, 1989), 27.

[114]Ibid., 316.

[115]Ibid., 319. Scott approvingly cites Polanyi in *Seeing Like a State*, 426 n. 22.

[116]An example of Popper – the tradition of intolerance of traditionalists – suggests as a possibility that among traditions there are, in Popper's view, some that, while they are themselves regularities, may not enhance social order. Ibid., 134. Shils argues that some traditions weaken the social fabric (Shils, *Tradition*, xxxiv, 201-202).

[117]Although Popper typically views traditions as instruments, there are some, he suggests – science for example – that have immanent value for their practitioners, science being regarded by Popper as self-justifying and a spiritual adventure, as well as being an instrument with which to better understand the world. In this regard, his theory overlaps Polanyi's.

[118]Anthony O'Hear, "Criticism and Tradition in Popper, Oakeshott and Hayek," *Journal of Applied Philosophy* 9, no. 1 (1992): 69-70; also Alan Wells, *Social Institutions* (London: Heinemann, 1970), 289.
[119]Polanyi, "Growth of Thought," 450.

[120]John Casey, "Tradition and Authority," in *Conservative Essays*, Ed. Maurice Cowling (London: Cassell, 1978) 85.

[121]Popper, "Rational Theory of Tradition," 131.

[122]Ibid., 131.

[123]Ibid., 121 and 122.

[124]Polanyi, *Personal Knowledge*, 270, quoting J. S. Mill, *On Liberty* (London: Dent, 1910), 83.

[125]Polanyi, *Personal Knowledge*, 271.

[126]Ibid., 265.

[127]Marjorie Grene, *A Philosophical Testament* (Chicago: Open Court, 1995), 169 considers that Polanyi's position does not entirely "escape from the relativist dilemma." See also Struan Jacobs, "Michael Polanyi, Tacit Cognitive Relativist," *The Heythrop Journal,* 2001 xlii: 4, 463-476. For a contrary interpretation of this strand of Polanyi's thought, see Mark T. Mitchell, *Michael Polanyi* (Wilmington: ISI Books, 2006), 101, 176 n.34.

Embodied Knowing: The Tacit Dimension in Johnson and Lakoff, and Merleau-Ponty

Kyle Takaki

ABSTRACT Key Words: Being-in-the-world, embodiment, enactive realism, image schema, metaphor, tacit knowing.

Embodiment is a crucial feature of Polanyi's tacit knowing. In the following, I synthesize ideas from Polanyi, Johnson and Lakoff, and Merleau-Ponty to further illuminate the embodied dimensions of tacit knowing. I appropriate two widespread embodied structures, image schemas and metaphor, into a Polanyian framework for embodied knowing. I also briefly indicate some important ways in which Polanyi departs from these three thinkers.

Introduction[1]

The embodied nature of knowing is a prominent theme of Michael Polanyi's works. Mark Johnson and George Lakoff also vigorously explore this theme within the context of cognitive science, and in the phenomenological tradition, Maurice Merleau-Ponty emphasizes the primacy of immediate perception and the body schema. In the following paper I weave together threads from these thinkers—despite their differences of detail and purpose—to further illuminate the embodied dimensions of tacit knowing. In particular, I concentrate on two prominent embodied structures, image schemas and metaphor.

I begin with Polanyi's general outline of tacit knowing. Sections three through six enrich and complement Polanyi's framework by articulating the structures that Johnson and Lakoff provide, and section seven presents Merleau-Ponty's phenomenological contribution. I then offer a synthesis of the overall discussion in section eight, and in the last section I present some important ways in which Polanyi departs from these three thinkers, and the implications this holds for embodied knowing.

Tacit Knowing as Embodied Knowing[2]

Michael Polanyi characterizes tacit knowing as a relationship between a focus and its subsidiaries, a relationship that is Ronald Bontekoeoe says "present in *all* knowing, [since] every *act* of knowing is just that, an action, and all action involves a focal attending toward the end of the action and a subsidiary or tacit awareness of [all else we go through] to achieve that end."[3] Since these actions rely on bodily modes of support, tacit knowing is ultimately an embodied process. Indeed, Polanyi claims that "there is only one single thing in the world we normally know only by relying on our awareness of it for attending to other things. Our own body is this unique thing. We attend to external things by being subsidiarily aware of things happening within our body."[4] It is crucial, though, to distinguish focal attention from the embodied subsidiaries supporting such attention. For just as we cannot use our "spectacles to scrutinize [our] own spectacles," our bodies—as well as their extensions (e.g., tools, language, theories, etc.)—are things that in the process of using them, we "cannot *in this action* be focally aware of" (*M* 37). As soon as we shift our attention to our bodies, the action that we were engaged in breaks off, and a different action ensues—we are no longer subsidiarily dwelling *in* our bodies, but now adopt another level of (focal-subsidiary) awareness *that* we are dwelling in our bodies.

There are four aspects of tacit knowing: the functional, phenomenal, semantic, and ontological aspects. The functional aspect is a *from-to* relation between a focus and its subsidiaries—a durable structural relation (*KB* 146) between proximal particulars as they support a distal object of focal attention (*M* 34, *KB* 140-1). The phenomenal aspect of tacit knowing is a *gestalt* where X is seen in some capacity (of the from-to relation), and where this new structural whole (*TD* 6) is not reducible to the proximal particulars from which it is tacitly created (*M* 35). The semantic (personal) aspect of from-to knowing concerns the "focal target upon which [the subsidiaries] bear, [which] *is the meaning* of the subsidiaries" (*M* 35). Lastly, the ontological aspect of tacit knowing is inferred from the previous three aspects (*TD* 13); it claims that when a subsidiary-focal relation is grasped as a *comprehensive* entity, that entity signifies an enactive reality (*TD* 13, 24).[5] For Polanyi, this four-fold structure of tacit knowing delineates all skillful knowing.

It is important to observe that focal awareness "is always fully conscious, but subsidiary awareness can exist at any level of consciousness, ranging from the subliminal to the fully conscious. What makes awareness subsidiary is its functional character [as it relates to or supports foci]" (*M* 39). Whatever level of consciousness is involved, the subsidiary-focal relation of tacit knowing is fundamentally an embodied process that is open to investigation at different (functional) levels of operation. For example, the use of probes—as when a blind man learns to wield a cane, which in time becomes an extended "appendage"—illustrates not only the embodied nature of knowledge, but also the largely tacit ways in which subsidiaries are continually recast into skillful modes of knowing.[6] Since for Polanyi "*all* knowing is personal knowing—participation through [embodied] indwelling" (*M* 44)—in the following sections I investigate two prominent embodied dimensions of tacit knowing, image schemas and metaphor.

Body in the Mind

Johnson's work *The Body in the Mind* has one fundamental lesson: "*any adequate account of meaning and rationality must give a central place to embodied and imaginative structures of understanding by which we grasp our world.*"[7] Assuming that all knowing is either tacit or rooted in tacit knowing, and that the meaning of subsidiaries stems from the focus upon which they bear, I will argue that this lesson complements Polanyi's position.

Johnson's use of "body" stands as a "generic term for the embodied origins of imaginative structures of understanding, such as image schemas and their metaphorical elaborations" (*B* xv). For Johnson, image schemas are central structures of understanding; they are not literal images but "structures that organize our mental representations at a [more general] level" (*B* 23-4). They have two important features: they are nonpropositional structures, and they have a figurative embodied character (*B* xx).

The first feature is about the tacit dimension of embodiment:

Because of the limitations of our propositional modes of representation, we have a hard time trying to express the full meaning of our experiences. To cite a simple example, my present sense of being balanced upright in space at this moment is surely a nonpropositional awareness that I have, even though all my efforts to communicate its reality to you will involve propositional structures (*B* 4).

Image schemas arise from embodied patterns of interaction that are not reducible to propositional forms. In Polanyian terms, while propositional language communicates one's "present sense of being balanced upright," for example, it would be a mistake to view the linguistic objects of focal awareness as the bodily subsidiaries supporting such knowledge. As Johnson goes on to note "while we must use propositional language to describe these dimensions of experience and understanding, we must not mistake our mode of description for the things described"(*B* 4).

Before articulating the second feature (image schemas have a figurative embodied character), I first characterize image schemas. In general, an image schema is "*a recurrent pattern, shape, and regularity in, or of, those ongoing ordering activities*" (*B* 29). It consists of a "small number of parts and relations, by virtue of which it can structure indefinitely many perceptions, [concrete] images, and events" (*B* 29). These patterns are embodied at a pre-conceptual level (*B* 13), and in turn provide structure to many of our higher-order modes of knowing. Image schemas thus are central to Johnson's tacit dimension, as they support and enable various structures.[8]

To avoid misinterpretations of image schemas, first note that they are dynamic sensorimotor patterns, broadly coincident with Deweyan habits.[9] Secondly, image schemas can be viewed as one aspect of Polanyi's wider (and more "active") conception of embodiment. Since tacit knowing involves a continual (hermeneutic) integration and reintegration of knower and known (see *DHC* Ch. 6), where our transactional being-in-the-world is constantly negotiating the particularities of our historical, social, and physical environments, image schemas can be seen (more narrowly) as dynamically configured-and-configuring (*B* 21, 29-30) subsidiary structures that actively support other structures—they are moments of a dynamic process, and are not isolatable in and of themselves.[10] Thirdly, while image schemas are historically indebted to Kantian schemata, one should keep in mind that Johnson and Lakoff's approach is rooted in "second generation" cognitive science. Image structures are part of a research program that provides abductive and experimental evidence for these non-transcendental sensorimotor patterns:

> In the emergence of second-generation cognitive science, there were no a priori commitments to the existence of prototypes, conceptual metaphors, image schemas, radial categories, embodiment, and so on. There was, however, a *commitment* to make sense of a vast range of phenomena that included polysemy (systematically related linguistic forms), inference, historical change, psychological experiments, poetic extensions of everyday language, gesture, language acquisition, grammar, and iconicity in signed languages. The evidence from these diverse empirical domains *converges*: It is all made sense of by conceptual metaphors, image schemas, and radial categories—and by no other theory of concepts yet proposed. The concrete results about conceptual and inferential structure were empirical discoveries not anticipated in advance. Indeed, they were quite *surprising* [emphases mine] (*PF* 80-1).

Image Schemas

The best way to describe the figurative embodied character of image schemas is to give an example. One deeply entrenched image schema is the IN-OUT schema. Our daily lives are rife with in-out orientations: we get in our cars and step out of them; we fall into a deep sleep and awake; we put food in our mouths and. . .so on. In-out orientations permeate our lives, whether we are aware of them or not, and this general recurring pattern forms an image schema. Moreover, the IN-OUT schema has several subvariations where different levels of

abstraction manifest themselves depending on the type of action involved.[11] For example, the IN-OUT schema underlies the abstract conceptualization of a viewpoint. A viewpoint can be represented diagrammatically as a centered point and an encompassing circle, indicating a reference point directed towards a bounded horizon; the IN-OUT schema maps a person's perspective to the centered point (IN), and maps the view seen to the bounded horizon (OUT). The "assumption of a viewpoint is not typically a matter of entertaining certain concepts or propositions . . . rather, it is simply a point of view that we take up, *because it is part of the structural relations of the relevant schema*" (*B* 36). That is, we dwell in the point of view that we adopt, as it is a recurrent pattern we tacitly appropriate.

Thus in accordance with (three of)[12] Polanyi's features of tacit knowing, an image schema serves a *functional* role in structuring foci—in this case, the role played by the IN-OUT schema as it bears upon a point of view we take up—where this subsidiary schema carries the *personal* meaning it does because we adopt that perspective. Each image schema also involves a *gestalt*, which is "an organized, unified whole within our experience and understanding that manifests a repeatable pattern or structure" (*B* 44); here there are two gestalts: the IN-OUT schema as a patterned whole, and the bounded horizonal aspect of adopting a viewpoint. Gestalt structures also have an internal structure "that connects up with aspects of our experience and leads to inferences in our conceptual system" (*B* 44). There are many types of gestalts, some more prevalent than others. For example, there are a variety of "force gestalts," like BLOCKAGE, that Johnson describes in some detail (*B* 45-53). What is important for our purposes is that gestalts constrain the meaning of subsidiaries, since the way in which they bear upon foci is not arbitrary, but patterned. And more generally, an image schema's functional, semantic, and gestalt aspects highlight patterns upon which further cognitive patterns are constructed.

Embodied Metaphor

Image schemas dynamically support and enable a number of other embodied structures (e.g., higher categories, metonymy, etc.).[13] One structure that Johnson and Lakoff discuss at length is metaphor. Image schemas make possible "metaphorical projections," which extend a "schema from the physical to the nonphysical" (B 34). For example, the expression "tell me your story again, but leave out the minor details" (*B* 34) projects the physically based CONTAINER schema—which arises from embodied patterns such as using a cup, or being a physically bounded organism with "inner stuff"—to the event of telling a story. The CONTAINER schema also utilizes the IN-OUT schema (leave out the minor details, and leave in the relevant content), and conceptualizes the event of telling a story—strictly speaking, a nonphysical, conceptual entity—in terms of this container. The view of metaphor that Johnson and Lakoff defend is one treating "metaphor as a matter of projections and mappings across different domains in the actual structuring of our experience (and not just in our reflection on already existing structures)" (*B* 74). This allows for an account of "dead" metaphors—metaphors that Johnson and Lakoff argue we actually live by—as well as the formation of new metaphors.

Hence metaphors, as experiential and embodied structures, are not merely linguistic figures; this is only one of their manifestations. Generally speaking, "*the essence of metaphor is understanding and experiencing one kind of thing in terms of another.*"[14] For Johnson and Lakoff "human *thought processes* are largely metaphorical" (*ML* 6); the main function that metaphor serves is to partially structure our concepts through highlighting—the mapping of select information from one domain to another.

Johnson and Lakoff describe various types of metaphors: orientational, ontological, and structural metaphors, all three of which are conventional metaphors; and new metaphors, which are grounded in our

understanding of conventional metaphors. Briefly, structural metaphors structure one concept in terms of another; orientational metaphors organize "a whole system of concepts with respect to one another" (*ML* 14); and ontological metaphors provide "ways of viewing events, actions, emotions, ideas, etc., as entities and substances" (*ML* 25).

Structural metaphors structure concepts through what they hide and what they highlight. An example of a structural metaphor is the CONDUIT metaphor. For aspects of certain theories of language (e.g., aspects of John Searle's speech-act theory; *B* 58-9), a meta-language is structured by a complex CONDUIT metaphor highlighting the following three ideas: ideas are objects, linguistic expressions are containers, and communication is sending (*ML* 10). An idea's illocutionary meaning is an object stuffed into a container by a speaker (the locutionary act), and then sent off to a hearer where the package is interpreted via a perlocutionary act.

Orientational metaphors orient a web of concepts. Johnson and Lakoff observe that most of our orientational metaphors are spatial in nature, since "we have bodies of the sort we have and that they function as they do in our physical environment" (*ML* 14). For example, the metaphor "GOOD IS UP gives an UP orientation to general well-being, and this orientation is coherent with special cases like HAPPY IS UP, HEALTH IS UP, ALIVE IS UP, CONTROL IS UP" (*ML* 14).

Ontological metaphors "allow us to pick out parts of our experience and treat them as discrete entities or substances of a uniform kind" (*ML* 25). Certain boundaries marking off discrete entities arise naturally from common interactions with the world, whereas others are more artificial and fulfill specific human purposes like "locating mountains, meeting at street corners, [or] trimming hedges"(*ML* 25). Viewing an expanse of land as a container, for example, allows for the ontological metaphor: "there's a lot of land in Kansas" (*ML* 30).

How are new metaphors generated? For Polanyi, a prominent feature of tacit knowing is that new ideas are created from previous ones. If image schemas support further structures of understanding like metaphor, the question remains how novel concepts are generated. Since I've only discussed metaphor, here is an account of how new metaphors are generated from sedimented ones. The primary source of novelty is conventional metaphor, whether structural, orientational, or ontological. Structural metaphors, in particular, are potent sources of new metaphors, since the mappings they establish "allow us to do much more than just orient concepts, refer to them, quantify them, etc., as we do with simple orientational and ontological metaphors; they allow us, in addition, to use one highly structured and clearly delineated concept to structure another" (*ML*, p.61).

All three types of metaphor are grounded in systematic experiential correlations (schematic patterns of bodily interaction) (*ML* 61), which lead to the establishment of domains, and mappings between domains. Correlations that share "enough of the same structural features" (*ML* 84) form categories; metaphors, by contrast, map certain elements from one domain to another. Categorization and metaphor thus are "endpoints on a continuum" (*ML* 85). New concept formation occurs on this continuum when categorization and metaphor interact: the formation of new concepts stems from elements of old categories that are metaphorically projected to a new domain. These new domains in turn are "*multidimensional structural wholes*; structuring our experience in terms of such multidimensional gestalts is what makes our experience *coherent*"(*ML* 81).

There are several related points about such coherence. The first is that metaphors have "entailments," which are the consequences a metaphor affords. For example, an entailment of the metaphor AN ARGUMENT IS A JOURNEY is that "an argument defines a path" (*ML* 91), as a journey defines a path. Entailments "play an

essential role in linking all of the instances of a *single* metaphorical structuring of a concept" (*ML* 96). Secondly, metaphorical entailments "play an essential role in linking *two different* metaphorical structurings of a single concept" (*ML* 96). This allows for the establishment of cross-metaphorical connections, and thereby the generation of new concepts. Structural metaphors are especially good at this, since they can create "hybrid" links that "pick out a range of experiences by highlighting, downplaying, and hiding" (*ML* 152). Thus new metaphors engender new concepts having real cash value. And as they are fixed in discourse, they become dead metaphors, starting anew the ebb and flow of novel concept formation based on established structures.

Polanyi and Metaphor

Thus far I've discussed aspects of metaphor (and image schemas) from an epistemic perspective, highlighting metaphor as (epistemically) understood and placing in the background metaphor's poetic capacity. In order to see how tacit knowing also accommodates poetic experience of metaphor, I need to shift gears and focus on metaphor's phenomenal dimension. I shall utilize selected insights from Bontekoe to link metaphoric structure with metaphoric experience, further indicating how Polanyi's framework encompasses a "continuum" of modes of tacit knowing.

According to Bontekoe, the linguistic essence of metaphor lies in its "resistance to the literally true."[15] More specifically, this tension isn't merely between "what is asserted and what is literally true. It arises rather from our uncertainty as to precisely what it is that is being asserted" (*F* 221). Such uncertainty spurs us on to inquiry and then to interpretational satisfaction, which allows the "metaphor to take on its charge of feeling" (*F* 224). The use of metaphor finds its traditional representative in poetry, where metaphor's "vector-feeling" plays an essential role in contributing to "the musical pattern of meaning which is the poem" (*F* 217). How do these observations fit with the prior discussion of metaphor? Johnson and Lakoff do not have anything explicit to say about poetry's musicality.[16] However Polanyi provides an account of metaphor compatible with such musicality as well as Johnson and Lakoff's insights, thus providing a bridge between poetic metaphor as experienced and metaphor as understood.

Polanyi diagrams the vector-feeling character of metaphor (*M* 78), where felt subsidiaries bear upon a focal metaphor. Metaphoric meaning emerges when "a symbol [the linguistic vehicle] embodying a significant matter has a significance of its own and this is akin to the matter that it embodies [the tenor, or subsidiary structure, which forms the background by which the tension between what is literally true and what is asserted can occur]" (*M* 78). The musicality of poetry is itself a metaphor for understanding skillful employments of poetic metaphor; the projection is from musical experience to poetic disclosure. That is, musical meaning emerges when properly engaging with a fine work of music, where a musical mood (the background tenor) bears on the appearance of a motif (the vehicle, which, if taken literally is just a sequence of sounds). The motif then reintegrates itself with the musical background (forming the metaphor—the symbol embodying the tension between the literal and what is asserted), allowing the motif to acquire meaning through the rapture we feel. As Polanyi writes: "the subsidiary clues—consisting of all those inchoate experiences in our own lives that are related to the two parts of a metaphor [i.e., the tenor and the vehicle]—are integrated into the meaning of a tenor and a vehicle as they are related to each other in a focal object (a metaphor)" (*M* 78-9). Hence metaphor's power to affect us involves two integrative moves: 1) the (integrative) bearing that a subsidiary tenor has on the focal vehicle, both of which comprise the metaphoric figure; and 2) the personal subsidiary clues bearing upon the metaphoric figure, which jointly create interpretive robustness and felt meaning.

At this higher level of refined knowing, the (aesthetic) musicality of metaphor focuses less on the structure of metaphor and metaphoric understanding (the "musical score" and "music theory"), and more on the dynamic qualia of poetic experience (the actual experiencing of the musical performance). For Polanyi, metaphor is a mode of signification—the vector-feeling character of metaphor enacts meaning. The supporting structures that Johnson and Lakoff discuss find their most refined expression in aesthetic, skilled forms of experience. It is in the context of such "consummatory experience"[17] that tacit integration acquires prominence, where emphasis is placed on the phenomenal aspect of tacit knowing. In the following section, I expand on this lived, phenomenological dimension of tacit knowing.

Merleau-Ponty and Embodied Being-in-the-World

What Merleau-Ponty contributes to the dialogue, I propose, is a vocabulary complementing Polanyi's framework. In particular, Merleau-Ponty employs four terms for understanding lived embodiment which blend the physical, metaphoric, and poetic: the "body" (whose referents are physical and perceptual), the "body schema" (connoting perceptual-motor actions), the "phenomenological field/horizon" (a figurative metaphor), and "being-in-the-world" (a term of poetic disclosure). The intertwining of these four notions offers a poetic understanding of the tacit modes of commerce with our physical, social, and historical environments. I conjecture that the use of poetic language is not incidental, since (more generally speaking) poetry is particularly suited for disclosing that which is just beyond the reach of language—for gesturing towards the unarticulated. This conjecture apparently fits with Merleau-Ponty's claim that phenomenology's task is to "reveal the mystery of the world and of reason."[18] For if this unarticulated "mystery" is to be phenomenologically disclosed, it would appear that employing poetic language is a (well-established) way to achieve such a task.[19]

The "mystery" issues from our modes of embodied commerce with the world. First, we cannot properly make any sharp distinction between the body and mental acts, as they always form a functioning whole: "psychological motives and bodily occasions may overlap because there is not a single impulse in a living body which is entirely fortuitous in relation to psychic intentions, not a single mental act which has not found at least its germ or its general outline in physiological tendencies"(*P* 88). Second, these tendencies are patterns through which the body enables significance. The body's ability to acquire habits, though, is not only a source of sedimentation, but like the generation of new metaphors from old, the body can also create new behaviors. Hence thirdly, it is the "open and indefinite power of giving significance—that is, both of apprehending and conveying a meaning—by which man transcends himself toward a new form of behavior" (*P* 194). The "mystery of the world and of reason" lies in this *indefinite* power of giving significance.

The body, as physical and perceiving, can elaborate on its basic, "primary actions [by] moving from their literal to a figurative meaning" (*P* 146) via metaphorical projections and image schemas. Meaningful structures grow in complexity, but always "at all levels [the body] performs the same function, which is to endow the instantaneous expressions of spontaneity [with some seed of meaning]" (*P* 146). This core "mysterious" power is expressed through the body schema, which is "an open system of an infinite number of equivalent positions directed to other ends"(*P* 141). For example, the IN-OUT schema is a facet of the body schema that supports many more elaborate structures, but the spontaneous gestalt power by which new structures are projected remains tacit, and to some extent unarticulable (at least when dynamically performing the relevant act).

Merleau-Ponty observes that language depends on embodied comportments: "When I say that 'an object is on a table', I always mentally put myself either in the table or in the object, and I apply to them a category

which theoretically fits the relationship of my body to external objects. Stripped of this association, the word 'on' is indistinguishable from the word 'under' or the word 'beside'" (*P* 101). Thus our embodied transactions with the world allow for the formation of sedimented habits (e.g., dead metaphors like "I'm beside myself"), as well as new structures (e.g., new metaphors). For just as constructing new metaphors requires a fund of previous structures, so likewise integrating and reintegrating new habits requires a fund of previous skills and capacities. As Merleau-Ponty writes, "the acquisition of habit [is] a rearrangement and renewal of the corporeal schema" (*P* 142).

Such "rearrangement and renewal" highlights that the body is always and already in the mind. How is the (lived) body interwoven with the mind? Through a gestalt, a "wordless logic" in which our own "body-world...[breathes] into it a secret and magic life by exerting here and there forces of distortion, contraction, and expansion" (*P* 49). Consistent with the phenomenal and semantic aspects of tacit knowing, it is the spontaneous power of the body that generates a projective field/horizon of significance populated by integrative "whole[s] charged with immanent meaning" (*P* 58). These wholes, in turn, are irreducible configurations of bodily syntheses—phenomenological qualia focusing an indefinite array of subsidiaries.

The body-world signifies our continual, on-going transactions with particular physical, social, and historical environments—our being-in-the-world (*P* 143). The metaphoric and figurative character of one's "field/horizon" emphasizes that we continually "project" our bodily comportments onto other transactional modes of being-in-the-world. As Merleau-Ponty notes, our horizon is "a system of *possible* actions, a *virtual body* [emphases mine] with its phenomenal 'place' defined by its task and its situation. My body is wherever there is something to be done" (*P* 250). The body is not merely a physico-perceptual thing; rather its various actions configure spatial possibilities that endow embodiment with a figurative character.

Additionally, the virtual body is ensnared with an external world through temporality. On the one hand, "time is the foundation and measure of our spontaneity, and the power of outrunning and of 'nihilating' which dwells within us and is ourselves, is itself given to us with temporality and life" (*P* 428). In Polanyian terms, the from-to structure of tacit knowing (which includes the ability to project one's possibilities (*P* 426), as when a blind man's cane becomes an extended appendage, or when considering future courses of action) stems from the intertwining of time and the lived body. For Merleau-Ponty, the virtual body's horizon of making-and-remaking is both a spatial (*P* 408) and temporal horizon (*P* 69): the intentional (from-to) structure of deliberative action requires both "spatial action" (the spatial horizon of probative, continual from-to cane actions, for example) and "skill acquisition" (the temporal horizon of related trials and errors bearing upon one's present situation—a "from-to" negotiation of elements of one's past bearing upon one's present).

On the other hand, "I am not the creator of time any more than of my heart-beats. I am not the initiator of the process of temporalization; I did not choose to come into the world, yet once I am born, time flows through me, whatever I do" (*P* 427). This is neither a naive realism nor mere empiricism; rather the lived body brings forth a horizon, relative to what the world affords. For Merleau-Ponty there is a pre-conceptual intentionality (a "non-thetic consciousness") bound up with deliberative acts. The primordial quality of being-in-the-world—what Marjorie Grene calls, in her interpretation of Merleau-Ponty's ontology, a philosophy of "presence"[20]—emphasizes this pre-conceptual aspect of intentionality. In Polanyian terms, tacit knowing's phenomenal from-to structure indicates a transactional intentionality situated within a field of deliberative and pre-conceptual acts.

In sum, Merleau-Ponty's "enactive" view serves to remind us that knowing is tacitly anchored in bodily

modes of ontological[21] perception (*P* 242), whose indefinite comportments and spontaneous power together enact various cognitive structures in the ongoing process of being-in-the-world.

A Hermeneutical Synthesis

Thus far I have used Polanyi's general insights on tacit knowing and embodiment to frame two prominent embodied structures, image schemas and metaphor. From a "bottom-up" perspective, these dynamic embodied structures support and enable a wide range of skills; however Polanyi is more radical than this claim indicates. To see how Polanyi differs from Johnson and Lakoff I shall offer an interpretive framework synthesizing Polanyi, Johnson and Lakoff, and Merleau-Ponty. Specifically, I claim that from a broader perspective there is a hermeneutic circle where (1) the lower pole, which includes these dynamic structures, is directed to the upper pole of meaningful knowing, which signifies lived integration; and (2) the upper pole, in turn, is directed back down towards the lower pole, signifying the reintegration of habits as they are comprehended in their capacity as modes of tacit knowing. This hermeneutic circle is a meta-level portrayal of tacit knowing's dimensions. Allow me to unpack these claims.
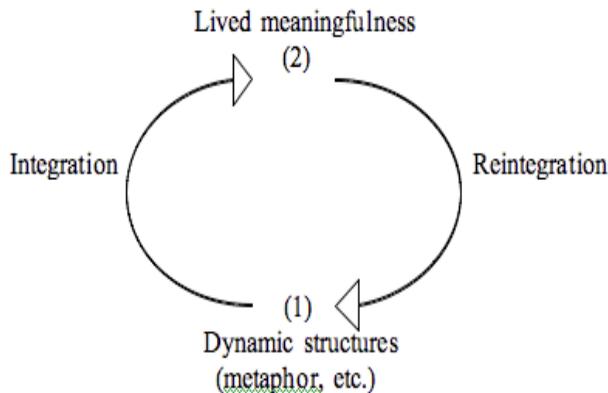
For (1), the claim isn't merely that there are subsidiaries relating to a focus; rather (1) is a meta-claim about tacit knowing itself—that is, the meta-claim reflects generally on the four aspects of tacit knowing (and not their particular character). I claim that just as particular subsidiaries only make sense on Polanyi's account as they relate to a particular focus (where it makes no sense to reify subsidiaries and a focus as things in themselves), so likewise (more generally) dynamic image schemas and metaphor only make sense as they bear upon tacit integrations concerning forms of skillful knowing. From this higher perspective, (1) can be seen as claiming that image schemas and metaphor "support" tacit knowing; and thus tacit knowing, from this momentary perspective (a time-slice, as it were), is a "special case" of what these types of structures afford. Indeed, the general thrust of what Johnson and Lakoff have to say about making sense of a wide range of phenomena (recall the last quote in section three) is that image schemas, conceptual metaphors, and radial categories—three prominent though not exhaustive "generators"—enact and create meanings that appear to encompass the field of tacit knowing. However their dynamic structures, from the above meta-level viewpoint, are interpretable as integrative moments of tacit knowing's broader dynamic, as signified by the upward arc of the hermeneutic circle.

Polanyi is more radical than what (1) suggests, since there is also the downward arc. (2) indicates a wider dynamism marking a significant difference from Johnson and Lakoff's kind of dynamism.[22] From the perspective of (2), it is more appropriate to say that metaphor and image schemas are actually "special cases" of tacit knowing (i.e., they shouldn't be viewed as "generators")—the inverse of (1). (1) highlights the integrative move of tacit knowing, where dynamic structures bear upon tacit integrations; (2) by contrast highlights the reintegrative move of how tacit knowing bears upon the meaning of dynamic structures. To be clear, since the hermeneutic circle is a *meta-level* portrayal of tacit knowing as it relates to structures like image schemas, the meta-level for (1) highlights integration, and for (2) highlights reintegration. Both of these non-separable moves are crucial to understanding the dynamics of embodied tacit knowing. At the *object level*, what (1) refers to are the particular components of tacit knowing, such as particular subsidiaries (e.g. an IN-OUT schema) bearing upon some focus; and what (2) refers to are actual reintegrations of a skill as it is reformed and remade.

In brief, image schemas and metaphors can be seen as moments of knowing-in-action captured by the first integrative arc (a narrower kind of dynamism). Merleau-Ponty's contribution highlights Polanyi's insight that tacit knowing is fundamentally an on-going process, drawing the implication that skillful knowing is always partially obscured (i.e., the "mysterious" spontaneity of the body, and the indefinite space of possibilities it projects); this aspect of knowing-in-action is captured by the second arc (a wider kind of dynamism). What Merleau-Ponty and Polanyi share is the idea that every act of tacit knowing already has present a subsidiary-focal relation that is constantly being cast and recast in concrete circumstances; our being-in-the-world is "always already" ensnared with an indefinite horizon of projective possibilities.

Polanyi and the Ontological Dimension

Where Polanyi goes beyond Johnson and Lakoff and, to a lesser degree, Merleau-Ponty concerns the implications of the ontological aspect of tacit knowing. I will sketch Polanyi's view of how the ontological dimension involves personal commitments which gesture towards a full-blooded (hierarchical) reality. I focus on three of Polanyi's claims that indicate some common ground between Merleau-Ponty and Johnson and Lakoff, although the metaphysical implications Polanyi draws are ultimately quite different from these thinkers. The three interrelated claims are about emergence, ontological hierarchy, and the correspondence between the structures of understanding and what those structures signify (*TD*).

Briefly, Polanyi distinguishes personal knowing—which concerns commitments to discovering the "real"—from mere subjective commitments that depend on tastes and the like.[23] Personal commitments search for a hidden reality that can only be hit upon by making such commitments in the first place.[24] Personal commitments directly relate to the fourth aspect of tacit knowing, the ontological dimension, which holds that when a from-to relation is understood as a comprehensive entity, that entity acquires-and-discloses a kind of reality—there is an emergent aspect to this comprehensive entity. Even stronger, Polanyi claims that the structure of our knowing such an entity maps to what that structure signifies. This may appear to confuse the reality of the referent with the mode of referring. However Polanyi is not claiming that there are two orders between which some traditional correspondence relation holds; this appeal to the "Objectivist" tradition, as Johnson and Lakoff call it (see *B*, *PF*, and *WFD*), is already a non-starter for Polanyi. Nor for similar reasons is Polanyi suggesting a kind of ("Cartesian," non-interactive) parallelism at work. It may appear, then, that Polanyi is claiming that we merely (socially) construct what is real. However this too would be mistaken. To see what Polanyi is saying, I shall contrast him with Johnson and Lakoff and Merleau-Ponty.

Firstly, Johnson and Lakoff are committed to an "embodied realism,"[25] but they don't think that higher-order concepts which image schemas, metaphor, and the like afford discover "the real" (*PF* Ch.8). They would probably view Polanyi as subscribing to an Objectivism of the sort they are arguing against.[26] Rather for Johnson and Lakoff, while there are mid-level engagements with reality (through basic categories, for example; see *WFD*), higher-order concepts are figurative and metaphorical through and through. Of course we can strive to understand "the real" (via mathematical physics, say—which still deeply involve image schemas, etc.), but it remains that since many meaningful structures are constructs of the embodied mind, it would be inappropriate to hold that the metaphors we live by "discover" what's real.

Related to the above is the second point that Polanyi doesn't subscribe to Objectivism; thus the previous objection would misunderstand Polanyi's realism. Polanyi's notion of "discovery" of the real isn't about mere types of existents; rather his emergent hierarchical ontology consists of *achievements* (*KK* 218). A "mere existent" like a cobblestone is of course real for Polanyi, but comparatively speaking it may not be worthy of recognition as an achievement—a rich nexus of meaningful relations, involving an interplay of "knower and known," that constitute an emergent comprehensive entity. Johnson and Lakoff also subscribe to the idea that higher-order concepts and structures are emergent—they are new multidimensional gestalts stemming from central structures like image schemas, radial categories, and metaphor. But in rejecting Objectivism I suspect they would misconstrue Polanyi's non-Objectivist realism, which makes stronger claims than their embodied position. As for Merleau-Ponty, his "realism" about perception (its non-thetic nature; *P* 242) is similar to Johnson and Lakoff's embodied realism, but it too apparently is not as radical as Polanyi's metaphysics (although both Merleau-Ponty and Polanyi endorse a pluralistic ontology).[27] Merleau-Ponty's realism goes back to revealing the tacit modes of being-in-the-world; we are always already entwined with pluralistic levels ontological engagement. Polanyi's realism encompasses both embodied realism and Merleau-Ponty's position; where he differs is in his additional forward-looking realism, where things can be more real depending on their level of significance (or level of achievement). In Peircean fashion, Grene suggests that one "entity is more real than another when it carries the possibility of a greater range of interesting and unexpected consequences" (*KK* 219). Similarly, Phil Mullins, who emphasizes the continuity of ontology and meaning in understanding Polanyi's notion of a comprehensive entity, writes: "Knowing and being are woven inextricably together…the ontological status of entities is not tied largely to 'existence' and tangibility, but to an entity's intelligibility and its prospect for greater intelligibility."[28]

The structural correspondence between understanding a comprehensive entity and what that understanding signifies is an act of commitment—a commitment juxtaposed with the interesting and unexpected consequences of a discovery. In asking and pursing the right questions, the sense that one has hit upon a real problem stems from one's commitment to reality as well as the (hermeneutic) feedback obtained from the ongoing consequences of an investigation. "Fruitfulness works ultimately as a criterion of truth of theories because it is a criterion of *reality*" (*KK* 220); meaningful commitments enact the search for the real and also continually invest reality to that search as the consequential fruits of investigation become integrated (and reintegrated) achievements. Polanyi's "enactive realism," as I have called it, is a fusion of being-in-the-world with consequential commitments that aim at levels of achievement—levels that include emergent comprehensions of the world, and their related commitments to emergent realities yet to be discovered.

This fusion does not just concern the (less controversial) claim that an "entity is *more* real, the more unforeseen consequences could flow from it" (*KK* 221); the true radicalness of Polanyi's enactive realism lies

in making the same claim for ideas (scholars, for example, may continue to generate-and-discover novel, unexpected, and richly meaningful and accurate interpretations of a text, attesting to its status as a classic). Thus the emergence of achievements establishes an (ongoing) ontological hierarchy; that hierarchy is engendered by tacit knowing, as highlighted by the fourth dimension; the correspondence between the comprehensive structure of understanding and what it signifies is itself a hermeneutic arc, enactively creating-and-discovering achievements which acquire greater reality (*TD* 33-4). This is a key difference between Polanyi and the others, since neither Johnson and Lakoff nor Merleau-Ponty entertain the *consequential* emergence of increasing levels of being—"reality" concerns either an embodied realism, or a primordial being-in-the-world.

In sum, Johnson and Lakoff's higher-order concepts are constructs based on embodiment, but there is no sustained inquiry into their possible metaphysical status as achievements; "skillful constructs," grounded in their embodied realism, would probably suffice for their purposes. Thus I suspect that Johnson and Lakoff would misconstrue Polanyi's fourth dimension. A new philosophy of embodiment may want to seriously consider the metaphysical status of embodied, enactive constructs and Polanyi's insights. As for Merleau-Ponty, I suggest similarly that Polanyi's insights present unexplored possibilities: we should not merely go "back" to the primacy of perception, but also look forward to what our commitments demand as we expand tacit knowing's hermeneutic circle.

Endnotes

[1]Thanks to Phil Mullins, Walter Gulick, Paul Lewis and anonymous referees for their rich feedback on earlier versions of this paper.

[2]See also Zhenhua Yu, "Embodiment in Polanyi's Theory of Tacit Knowing," *Philosophy Today*, 52:2, 2008, 126-35; and William Poteat, *Polanyian Meditations: In Search of a Post-Critical Logic* (Durham: Duke University Press, 1985).

[3]Ronald Bontekoe, *Dimensions of the Hermeneutic Circle* (New Jersey: Humanities Press, 1996), 202; referred to as DHC.

[4]Michael Polanyi and Harry Prosch, *Meaning* (Chicago: University of Chicago Press, 1975), 36; referred to as *M*. See also Michael Polanyi, *The Tacit Dimension* (New York: Doubleday & Co., 1966), 15-16 (referred to as *TD*); and Michael Polanyi, *Knowing and Being*, edited by Marjorie Grene (London: Routledge & Kegan Paul, 1969), 147-8 (referred to as *KB*).

[5]I will cash out the fourth aspect's "enactive reality" in the final section, especially concerning Polanyi's discussion of emergence, ontological hierarchy, and the correspondence between the structures of understanding and what those structures signify.

[6]Compare J.E. Tiles' discussion of habit in "On Deafness in the Mind's Ear: John Dewey and Michael Polanyi," *Tradition and Discovery*, 18:3, 1992, 9-16. I assume (but do not argue for the claim) that Polanyi's dynamic structures are compatible with Deweyan habits (see, for example, Polanyi's implicit appeal to James' reflex arc; *KB* 200).

[7]Mark Johnson, *The Body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason* (Chicago: University of Chicago Press, 1987), xiii; referred to as *B*.

[8]Image schemas are still "middle level" structures, and are not to be understood as atomic building blocks (cf. George Lakoff, *Women, Fire, and Dangerous Things* [Chicago: University of Chicago Press, 1987], 267-70; referred to as *WFD*).

[9]See George Lakoff and Mark Johnson, *Philosophy in the Flesh* (New York: Basic Books, 1999), 97; referred to as *PF*.

[10]Image schemas are dynamic patterns that tend to be more stable in comparison to tacit knowing's (hermeneutic) cycle of ongoing integration and reintegration. However it is important to keep in mind that they are still dynamic patterns of sensorimotor activation.

[11]That is, there are subtypes of the general type. Susan Linder documents three basic subtypes of the IN-OUT schema that act as prototypical structures (*B* 32-3).

[12]I leave out the fourth aspect since it marks a significant difference between Polanyi and Johnson and Lakoff; see section nine.

[13]For discussion of these structures, see also *WFD*.

[14]Mark Johnson and George Lakoff, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980), 5; referred to as *ML*.

[15]Ronald Bontekoe, "The Function of Metaphor," *Philosophy and Rhetoric*, 20:4, 1987, 209-26; 220. Referred to as *F*.

[16]Although compare Mark Johnson, *The Meaning of the Body* (Chicago: Chicago University Press, 2007); and George Lakoff and Mark Turner, *More Than Cool Reason: A Field Guide to Poetic Metaphor* (Chicago: Chicago University Press, 1989).

[17]John Dewey, *Art as Experience* (New York: Perigee Books, 1934). I save discussion of Polanyi's resonant notion of ontological "achievement" for section nine.

[18]Maurice Merleau-Ponty, *Phenomenology of Perception*, translated by Colin Smith (New York: Routledge, 1998), xxi; referred to as *P*. Connections between Polanyi and Merleau-Ponty are sympathetically discussed in Yu (op. cit.) and by Marjorie Grene: *A Philosophical Testament* (Chicago: Open Court, 1995); and *The Knower and the Known* (London: Faber and Faber, 1966). Referred to as *PT* and *KK*.

[19]The transition from Johnson and Lakoff's embodied "epistemics" to Merleau-Ponty's phenomenological "poetics" coheres with Polanyi's insight that dwelling in our bodies is a level of ("poetic") awareness different from reflecting ("epistemically") on the fact that we dwell in our bodies.

[20]Marjorie Grene, "Merleau-Ponty and the Renewal of Ontology," T*he Review of Metaphysics*, 29:4, 1976, 605-625; referred to as *MRO*.

[21]I shall discuss the ontological dimensions of Merleau-Ponty and Polanyi in the final section.

[22]Note that this is not intended as a criticism of Johnson and Lakoff. Rather the project in the last two sections is to indicate key differences between Polanyi and the other three thinkers so as to bring forth the immense scope of tacit knowing.

[23]Subjective commitments may also include failures of personal commitments (e.g., the commitment to phlogiston as genuinely explanatory). Also personal commitments may mistakenly be viewed as merely subjective if one fails to take into account the personal investment that commitment requires.

[24]Michael Polanyi, *The Study of Man* (Chicago: University of Chicago Press, 1959), 35; *Personal Knowledge* (Chicago: University of Chicago Press, 1962), Ch.10. See also *PT* 170.

[25]Consistent with Polanyi, Johnson and Lakoff write:

Because of the multiple levels of our embodiment, there is no one level at which one can express all the truths we can know about a given subject matter...Each different understanding of a situation provides a commitment to what is real about that situation...*What we mean by "real" is what we need to posit conceptually in order to be realistic, that is, in order to function successfully to survive, to achieve ends, and to arrive at workable understandings of the situations we are in.*

When, for example, we say that a construct of cognitive science such as "verb" or "concept" or "image schema" is "real," we mean the same thing as any scientist means: It is an ontological commitment of a scientific theory and therefore can be used to make

predictions and can function in explanations (*PF* 109).

[26]"Objectivism" covers a wide array of positions for Johnson and Lakoff. Generally speaking, it refers to views that have not paid proper attention to the role of embodied dynamic structures mediating self-world relations, and as a result have the tendency to separate knower from known.

[27] Marjorie Grene argues in *MRO* that Merleau-Ponty's pluralistic ontology is not "vertically" hierarchical (unlike Polanyi's hierarchical, pluralistic ontology), and is not consequentialist (being-in-the-world and its temporal structure concern the pre-conceptual present).

[28]Phil Mullins, "Comprehension and the 'Comprehensive Entity': Polanyi's Theory of Tacit Knowing and Its Metaphysical Implications," *Tradition and Discovery*, 33:3, 2007, 37.

Notes on Contributors

John Berkman (profberkman@yahoo.com) is Associate Professor or moral theology at Regis College, University of Toronto. In the fall of 2009 he returned home to his native Canada after 22 wonderful years of education and teaching in the United States. He most recently taught at the Dominican School of Philosophy and Theology and the Graduate Theological Union in Berkeley, CA.

Walter B. Gulick (WGulick@msubillings.edu), Professor Emeritus at Montana State University, Billings, is a frequent contributor to *TAD*. He was for several years the President of the Polanyi Society and for almost twenty years, has has been the Book Review Editor for *TAD*.

Struan Jacobs (struan.jacobs@deakin.edu.au) teaches social theory at Deakin University, Australia. He researches in twentieth century intellectual history, having a particular interest in the thought of Polanyi, Thomas Kuhn, and Karl Popper. He is the author or co-author of several articles and reviews published earlier in *TAD*. With R. T. Allen, he coedited *Emotion, Reason, and Tradition: Essays on the Social, Political, and Economic Thought of Michael Polany*i (2005), and with H. M. D'Cruz and Adrian Schoo he has coedited *Knowledge-in-Practice in the Caring Professions* (2009), both published by Ashgate.

Murray Jardine (jardimu@auburn.edu) is Jane Dickson Lanier Professor of Political Science at Auburn University. His field is political theory. His publications include Speech and Political Practice: Recovering the Place of Human Responsibility and The Making and Unmaking of Technological Society: How Christianity Can Save Modernity From Itself . His current book project, Political Theory, Theology, and Modernity, argues that the issues analyzed by postwar political theory point toward theological reflection for their resolution.

Araminta Stone Johnston (johnston@queens.edu) is an assistant professor of religion at Queens University of Charlotte, North Carolina. Her primary interests are in the area of religion, culture, and ethics. She has published several articles, including a previous one in *TAD* (20:3, 16-28) and her book *And One Was a Priest: The Life and Times of Duncan M. Gray Jr.*, a biography of Gray, will be issued by the University Press of Mississippi in Fall 2010. Gray is the retired seventh Episcopal bishop of Mississippi and was an active force for civil rights in the fifties and sixties.

William H. Poteat, An Oblique Introduction

Phil Mullins

ABSTRACT Key Words: Michael Polanyi, William H. Poteat, Marjorie Grene.
I here introduce a set of essays on William H. Poteat by quoting in full a 1968 letter from Poteat to Marjorie Grene. Poteat articulates reasons he cannot collaborate with Grene in editing the volume of Polanyi essays that was eventually published as Knowing and Being: Essays by Michael Polanyi *in 1969.*

This issue marks the third time that *Tradition and Discovery* has focused on the thought and work of William H. Poteat.[1] Poteat was one of the first American scholars to take an interest in the thought of Michael Polanyi back in the fifties. Scott and Moleski report in *Michael Polanyi, Scientist and Philosopher* (226) that Poteat visited Polanyi in Manchester in 1955 after discovering Polanyi's 1952 essay "The Stability of Beliefs," an essay ultimately incorporated in *Personal Knowledge* that has drawn attention from many scholars. Poteat soon became an intimate friend and intellectual colleague of Polanyi who was valued until the end of Polanyi's life. Certainly, as the essays in this and earlier issues of *TAD* show, Poteat inspired generations of Duke students and shared with them his enthusiasm for post-critical thought.

I am not sure that many interested in Polanyi and Poteat know that in the late sixties, Poteat was slated to edit, along with Marjorie Grene, what was at first called "Collected Papers" but eventually became *Knowing and Being: Essays by Michael Polanyi*. There is a very interesting letter of January 8, 1968, from Poteat to Grene about this project; it is preserved in the Papers of Michael Polanyi in the University of Chicago Library[2] because Poteat sent Polanyi a carbon copy. As an oblique introduction to Poteat and the set of essays about working with Poteat that follow, I am including the letter (which I stumbled across many years ago) in full below. It was an eloquent but informal letter, and I have not tried to annotate or doctor (with sic) it in any way. It is clear enough. It is an interesting tidbit of history, but it also tells us something about William Poteat and his sense of vocation.

January 8, 1958

Professor Marjorie Grene
Department of Philosophy
University of Texas
Austin, Texas 78712

Dear Marjorie:

I have by now had time to explore your proposition as to how the <u>Collected Papers</u> project might be brought off. And I have had an opportunity too, to sort through many personal considerations which clearly entered into my overly pessimistic judgment in my last letter to you-though I was quite unaware at the time of the extent to which they were determining my evaluation of our prospects.

Let me discuss these two factors separately and then put them together to see what, together, they mean.

There is no doubt that you have an editorial genius! The way in which you sketch out a plan for the U. P. does indeed make good sense. It has a shape which the integrity of the component papers intimates; it shows the real developments of M's. thought that go beyond P. K. and firm-up T.D. All this can be made sense of—though, as you say, it will be very difficult. And I agree that the arduousness of the task is not, by itself, reason for faint-heartedness. So much for that.

On the other side, there are these personal considerations that belong in the picture. It is regrettable that I have been so slow to see their bearing upon my view of the project and perhaps, even worse, that I allowed them no place at all when I accepted Michael's invitation.

When Michael asked me in Washington to be your collaborator, I agreed instinctively, without a moments thought. The sobering discovery that I had contracted in on a far more difficult assignment than, circumstances being what they are, I should have, somewhat threw me off my stroke.

What are these circumstances? I will not bore you with a complex analysis which I fear will shed little light in any case. Briefly, I am trying to do at Duke what should be the job of two and probably three men. It is not a question of mere volume of work, which in itself is always manageable. It is rather a matter of the constant pressure produced by a radical—essentially a Polanyian—attack upon the present intellectual climate, prosecuted in a program set in a quite convential graduate school. My appointment to a Professorship in Christianity and Culture was a great gaffe, if seen in terms of the conventional interests of the Establishment, since they unwittingly gave me great latitude—which I have been quick to seize upon. But from the point of view of my own life-long though modest war on the Cartesian ethos it has been a great boon. In eight years, I have achieved an intellectual influence—by no means confined to religion in which, in any ordinary sense, I have little interest—which is quite disproportionate for one man; and the latitude unwittingly conceded has, as I have exploited it, achieved the kind of "built-in-wobble" in the structures of the graduate school which Don Weismann has observed, makes it tolerable. None of this is something I have sought. Even less is it something I have deserved. In moments of self-doubt, only Michael's example persuades me I am wrong to think I don't belong in the university.

In practice, this means that far more graduate students, in their own desperation, are wanting to join the "happy few" than can easily be managed (I have ten dissertations in process under my supervision)—especially when I, my ideas, hence my candidates and their unconventional dissertations are deeply suspect. I am not, mind you, without moral and personal support, but I have few allies—though Ruel's coming to Chapel Hill is a part of the grand strategy.

Additionally, I have a fourteen month leave of absense beginning in June 1968 during which I plan to fulfill a goal of ten years' standing—I shall intensively study art history, all as part of the larger scheme I have described. This will take me farther away from the main line of my basic training than I have ever been. In order to risk so long an absence from my post

and from the daily "political" attention to my flanks, I have literally doubled my load for this academic year. I am trying to see through in one year one generation of graduate students. This was, of course, an insane project. But there it is. And I have vowed to deans, foundations, etc. that I will <u>not</u> compromise the time of my sabbatical with any addenda to my stated project.

I tell you all of this not to ventilate my sorrows. They are not even sorrows, but rather my joys. But now that I have succeeded in seeing through my own self-deception, I want to come clean with you (and Michael)—though there certainly was no conscious dissembling in the first instance.

All of this comes to saying that I was guilty of <u>hybris</u> in saying "yes" to Michael's original overture and cannot see the point in compounding my original crime, by reaffirming it after recognizing it for what it is.

It is pointless for me to say how painful it is to me to have betrayed you and Michael—since, you being the kinds of friends towards whom infidelity is possible, already know this.

Having said this, let me now conclude with what I do believe is not merely a self-justifying judgment: you along can do the job which you have outlined—and, indeed, any conceivable alternative—better than the two of us together could.

If my estimate of the importance of my own projects seems to you rather grand, as they do to me upon reading through the above, you will nevertheless accept it, I trust, as an estimate which, most of the time, I accredit myself with discrimination enough confidently to affirm.

All the best, dear Marjorie,
                                        Ever,

Endnotes

[1] See *TAD* 21:1 and 35:2, but also other essays that have reflected upon or drawn on William Poteat such as those by R. Taylor Scott and Beth Newman in 20:1 as well as David Rutledge's "William Poteat: The Primacy of the Person" in *Appraisal* 7:2 (October 2008): 31-37.

[2] The Papers of Michael Polanyi are in the Department of Special Collections of the University of Chicago Library. This letter is in Box 16, Folder 2. Reproduction of this archival letter is with permission of the Department of Special Collections.

But Bill . . . ?: Poteatian Meditations

R. Melvin Keiser

ABSTRACT Key Words: William H. Poteat, Michael Polanyi, Merleau-Ponty, Wittgenstein, Martin Buber, H. Richard Niebuhr, existentialism, tacit dimension, mindbody, linguistic meaning, critique of Enlightenment dualism, imagination, the dialogical, spoken/written meaning, gratitude.

Fascinated by Tradition and Discovery's *appreciation for Bill Poteat (35:2), I express my gratitude for his brilliant Socratic teaching and graceful mentoring; explore his evocative thought that carried further and integrated Polanyi's tacit dimension, Merleau-Ponty's mindbody, Wittgenstein's linguistic meaning, and Buber's I and Thou—all except Buber discussed in* Tradition and Discovery—*and look as well at his other central concerns with imagination, the dialogical, and the differences between spoken and written meaning; engage Bill in some Poteatian meditations interrogating his comments on Creed, Eucharist, Resurrection, Being, God; and leave the reader where Bill left me with responsibility to speak forth in the first person what I am finding through mindbodily reflections on and from the tacit dimension.*

I have read *Tradition and Discovery* 35:2 with fascination as former students and a colleague express their appreciation for, and inquire into the thought contributions of, Bill Poteat. The appreciation resonates in my soul with my gratitude for his dialogical Socratic teaching. Brilliantly, while caringly, opening students to our own deep selves, connecting head and heart, through the maieutic art of transformation, he sought to draw us out of the deracinate world of Enlightenment dualism to reflect on the ground of all knowing: our mindbodily being in the world—thus restoring us to ourselves in our bodies, in the world, among our fellow incarnate beings.

While I have been very clear about the life-saving, soul-engendering, intellectual-spiritual-quest inspiriting way of his teaching, I have been caught up in the questionings of my Duke colleagues, those with whom I in fact shared Bill's classes from 1969-1971 and you whom I have not met but who have been similarly touched by his incendiary pedagogical self. Reading your comments about influences upon him, and Polanyi's premier place, and about his distinctive contributions in his writings, I have been thrust back to reread my class notes and his writings to reflect on what I would say about these.

Being drawn back into Poteat's world explicitly (I have, ever since study with him, been attending from it), I find my current writing about meaning and religious language being interrogated by Bill. What would he say about it? I perceive that this might be a fortuitous—one might even say providential (whatever that might mean)—moment to join with Poteatian Polanyians to say publicly my great gratitude to Bill for his loving, witty, circumambulating provocations, catching me up into the postcritical dance with word and body, not to mention guiding me through to completion of the Ph.D.   It is as well the moment to figure out influences at play within him, the import of his written thought achievements, and to investigate from his perspective my ownmost self and emergent thinking.

No doubt, as everyone remarks, Bill was profoundly influenced by Michael Polanyi. Kieran Cashell's naming this "apprenticeship" is quite fitting.[1] In my experience of Bill's thinking in both teaching and writing, I would put alongside Polanyi: Merleau-Ponty. While I had encountered Polanyi before meeting Bill—through

a class with H. Richard Niebuhr on "Faith as Virtue" in 1960, and then, inspired by that, attending Polanyi's delivering the Terry Lectures in 1962 that became *The Tacit Dimension*—it was with Bill that I first read Merleau-Ponty. While his emphasis on the tacit is clearly from Polanyi, the emphasis on body is clearly from Merleau-Ponty—not that Polanyi does not speak of the body, nor that Merleau-Ponty does not speak of pre-reflective consciousness. There are others, as well, of immeasurable significance: Kierkegaard and the whole existentialist tradition, especially Buber and Marcel.

H. Richard Niebuhr, with whom he had studied at Yale Divinity School in the 1940s, was very important, and back to whom he wisely directed my attention for my dissertation, saying: "You see postcritical elements in Niebuhr that I had some sense were there; let's see you draw them out and develop them." Bill indicates in *Recovering the Ground* that Niebuhr was "most congenial to my own investigations" as we both were "radically shift[ing] away from the ground upon which dualism arose."[2]

Wittgenstein is obviously very important as Bill plunges into investigations of how language works, and attends especially, with the help of Buber's exploration of I-Thou, to the grammar of first person speech. Two contemporary companions on the postcritical journey should be mentioned as well: Elizabeth Sewell and Stanley R. Hopper. I remember Bill talking about a panel he had been on (one of his rare public appearances, I do not know when or where) with both of them. As the men talked, Elizabeth took over and took away the conversation. After the session, Hopper met Bill in the hotel hall and asked: "What happened?" Bill responded "Oh, that's Elizabeth Sewell!" While all three were working to transcend Cartesian dualism, Bill was closer to Elizabeth, and supported her helping start the religion department at University of North Carolina, Greensboro.

All of these thinkers were important to Bill. While there is no question about Polanyi's indispensability, rather than assessing causally who was most important, I would say—in Polanyian language—that Bill attended deeply from all of them towards the creation of his own thought, or—in Merleau-Pontian language—that all were significantly present in the background of his prereflective thinking.

What were his contributions as thinker? The *TAD* essays rightly speak of the centrality of the tacit dimension, the mindbody, preoccupation with linguistic meaning, especially the first person singular, critique of Cartesian dualism and its Enlightenment development. Attending from Polanyi, he went beyond him by articulating the grammar of the tacit dimension and of personal knowledge. Attending from Merleau-Ponty, he went beyond him by combining Wittgenstein's preoccupation with linguistic meaning with our bodily being in the world. Attending from Wittgenstein, he went beyond him with his inquiry into the grammar of first person speech. Attending from them all, he offered a way of speaking of the unity of self beyond modernity's dualisms in the word "mindbody." I remember him saying: "We were all born in the Enlightenment. Polanyi was fortunate in being a scientist and therefore did not know much of modern philosophy, so he was able to avoid many of its pitfalls." What I do not find in the *TAD* essays, which I think of equal importance, are his interest in the imagination, the dialogical, and the distinction between spoken and written meaning.

The difference between oral-aural speaking and visual written language is central to his thought, returned to again and again in *RTG*. His frequent reference to Yahwist and Platonic (Dale Cannon discusses[3]) is making the same point. Earlier I did not know what to make of this because it sounded like the typical mid-century opposition of Jerusalem and Athens. Now as I have been pulled back into Bill's writings, I see how important this is to his thought and I begin to get an inkling of its meaning.

Speaking and hearing are a dialogical event in time. In dialogue (between two or more "I's") it becomes clear, when reflected back upon in a way not evident in the written, that all language is temporal, bodily, and created by selves. Speaking and hearing shows the speaker existing in time coming from not having said something yet, to reaching for the fitting words, and then conveying them with one's whole bodyself. The speaker draws from his or her past of engagement with meaning in and beneath, reaches towards giving shape to, articulating, meaning that is pressing towards form. Not only is the speaker reaching back and reaching forward in time, he or she is reaching down into the body. The grammar of our speaking is preformed in the sinews of our body, in the body's prelingual logos and intentionalities: "Language—our first formal system—has the sinews of our bodies, which had them first. . . ." "Its grammar, syntax, metaphorical and semantic intentionalities were first and are still the 'grammar,' 'syntax,' 'metaphorical' and 'semantical' intentionalities of our mindbodies."[4] As the speaker dwells in time and his or her body, the listener is witness to an act of creation. Often in speaking the groping of thinking is evident as sentences are left incomplete or ungrammatical, as one backs up, diverges, circles around before arriving at the meaning one wants to say, yet from which one might take off again in several directions in the effort to say it better.

Bill distinguishes written language from speaking because what is written appears to have a reality of its own that is an object of sight rather than an act of speaking and hearing. Laid out in front of us, it appears unchanging, simultaneous, uncreated, as we think all too often in our modern world about eternity. Creativity of the "I" that created the linguistic meaning is not evident. That it came out of the rich nothingness of the writer's bodily depths does not appear. Our culture of print, according to Bill, thus privileges sight over hearing, and objective thereness over personal being of "I's" bringing something to form. The reality written seems to have an existence independent of writer and reader, as it sits there on the page or screen, while the reality spoken retains an intimacy with its shaper: it has this form, this meaning, because an "I" has exercised agency and responsibility within a given context in relationship to a particular listener. The situation is not only in a particular place, it is at a particular time, and the listener perceives that it takes time to bring forth those words.

Imagination is important because all knowing, whether poetic intuition or abstract reasoning, is imagining[5]—achieving (grasping and shaping) forms through our mindbodies. He uses a distinction from Piaget. "Reversible reason" works from premises that can be made explicit, so you can move from rational conclusion back to its premises. "Irreversible reasoning" moves towards novel meaning that cannot be traced back to premises because emergent from the hidden depths of the tacit dimension. The reversible (scientific) is dependent upon the irreversible reasoning (Romanticism's "imagination") as rooted in our mindbodies.[6]

As well as looking back into *RTG*, I have serendipitously recovered my notes on Bill's dissertation, "Pascal's Conception of Man and Modern Sensibility" (November 13, 1950). In the dissertation all these themes of the *TAD* essays and the ones I have added are sounded, immersed in existentialist thought, before he has encountered Polanyi, Merleau-Ponty, and Wittgenstein. What will become "explicit" and "tacit" with Polanyi's and Merleau-Ponty's help was "exteriorization" and "interiorization." What will become mindbody in response to the Cartesian mind/body split is his conclusion that truth is only known through the heart by starting from incarnation. What will become his distinction between oral-aural speaking and visual writing is his recognition that Descartes' reason is after the analogy of seeing while Pascal's reasoning is after the analogy of hearing (which depends upon the whole soul's orientation).

Imagination is dominated in modernity by images of space and the sense of sight. This theme of imagination occurring early in the dissertation becomes the conclusion to his last book: imagination is what grips the real world and can be, must be, liberated from preoccupation with its own images detached from the self's mindbodily creative participation in the real.[7]

Polanyi and Merleau-Ponty, and all the others, can be seen, therefore, as companions in dialogue on the way and as bearers of meaning from which Bill attends to say what reality the logos of his mindbodily imagination articulates.

But Bill, why did you not go further, say what you saw about reality philosophically and theologically from the ground of your first-personal mindbody perspective? I understand Diane Yeager's disappointment.[8] His career, however, was not theological critique and innovation nor elaboration of a philosophical world. He was focused on the "how" of our knowing and being, not the "what" (to use Kierkegaard's distinction). Like Socrates, he left a method of reflection in his students' mindbodies, but as well in his writings. Others of his generation were similarly focused on methodology, on the "how": Wittgenstein, Merleau-Ponty, Hopper, Heidegger, Marcel.

Perhaps the real value of his *oeuvre* is the radical question to us his readers: Have we been sufficiently transformed so as to be returned to our own mindbodily being in the world beneath our "critical" dualisms to play our Plato to his Socrates? By this I mean, not the ideas of Plato, but his dialogical (even if in writing) effort to say what reality looks like after Socratic liberation from enchainment to the objective world and our Cartesian framework. Can we, can I, step forth to say what we (I) believe, and thus engage with Polanyi's declared project: "The principle purpose of this book is to achieve a frame of mind in which I may hold firmly to what I believe to be true, even though I know that it might conceivably be false."[9] In saying what I believe, can I find a way to say it passionately that is persuasive to others, but especially to myself, so as to disarm my own "critical" embarrassment of saying empirically unfounded things that express those deep-lying tacit commitments I hold to be true?

I think Kieran Cashell is right to underscore Bill's intention to write in ways that "defeat their appropriation in order that, paradoxically, the reader will be forced to dwell in, reappropriate and come to value the logos of his or her own quotidian mindbodily life."[10] Like Kierkegaard with his pseudonymities and Merleau-Ponty with his page-length involuted sentences, Bill throws the reader back onto his or her responsibility to reflect on what the logos of his or her own body would bring to presence in living words. In my own Quaker tradition Polanyi and Poteat's challenge is put by the founder, George Fox, confronting the soon-to-become mother of Quakerism, Margaret Fell, in non-philosophical mid-seventeenth-century English: You know what Christ and the apostles say, but "what canst thou say? . . . what thou speakest, is it inwardly from God?"[11]

It is that speaking from inwardness that I am trying to do as I write on the nature of religious language and reality. Now, re-immersing myself in Poteatian thought, I find myself being interrogated by Bill on whether I am succeeding, really, in getting beyond the Enlightenment mythos to speak as this mindbodily "I" that I am. I willingly take up the dialogue and want to respond.

As you are "exercising" your "critical" (see *RTG* 's subtitle) acumen on me, Bill, given all that you say,

how can you say what you do about the Nicene Creed? Can you say more of what your experience of "standing before God" is, how and what you hear in dialogue (like Abraham and Yahweh) with God? What does it mean in your mindbodily experience that God is speaking, that Christ is actually present in the Eucharist, that resurrection is a structure in the world as you stand before God? If mindbody is the ground of all our knowing and being, what is its ground? Ok, "Being."[12] Can you reflect on what you mean by "Being?" How do you, does anyone, speak of these matters beyond dualism?

I remember Bill saying something about the Nicene or Apostles Creed similar to what Wally Mead records[13]: "I find myself increasingly wanting simply to say the Creed when asked about my theology." Since you will not probe this theologically, you leave it to us to try to figure out what you mean. Is it what you affirm in *RTG*, that the creed is "myth"? You say: reciting it "make[s] a world appear" and expresses "the ultimate meaning and value for us of the world."[14] Clarifying that the language of creed is not a factual historical record but a mythic home for Christian mindbody dwelling makes sense. There are, however, several Christian myths. Why do you choose the orthodox one and how do you handle its problematic character? How, moreover, when you stress the spontaneity and novelty of speaking, drawing out from our mindbodily tacit dimension, can you, Bill, repair to a fixed formula and one written down? What would you do with most people who would misunderstand you to be asserting factual truth, who get hung up on the form as objective truth detached from the dynamism of mindbodies dwelling in the world, and some who would be willing to kill for that truth?

Your point, Bill, is an invaluable one about the way speaking makes visible the agency of the user by which words come into existence, whereas written language can appear detached from any making but rather seems to have an eternal (static, uncreated) being. But, Bill, is there really such a monolithic divide between the spoken and written? Your own Wittgensteinian panache should suggest multiple uses of both the spoken and written. Are there not forms of speech in which the creativity of the word-maker is not especially evident: a lecture, especially one that is read, a memorized recitation, a ritual repetition, scripture reading? Among the variety of written language some are especially powerful in making visible the reality that these are someone's words that they have drawn forth and crafted through their mindbodily creativity: poetry such as Eliot, Hopkins, or Donne's; autobiography such as Augustine's *Confessions* or John Woolman's *Journal*; dialogue such as Plato's (while he is reaching for the eternally permanent, his dialogical form has a dynamic of people interacting in whose written speech the truth may in a particular moment and in a particular place be glimpsed); political writing such as Lincoln's "Gettysburg Address," M.L. King, Jr.'s "Letter from the Birmingham City Jail," and Jefferson's "Declaration of Independence." In fact, Bill, your three meditative books do a very good job of making visible your own inimitable creative crafting of words.

Your argument, Bill, that our mindbodies are the ground of all empirical, scientific truths as well as of all philosophical and theological truths is powerful, but how do you handle these different language games where evidence is required in one and not (at least that kind of evidence) in the other? How do we discern truth in our irreversible reasonings (the ones without explicit premises), in what rises from the depths of our tacit commitments without empirical evidence? How do you discern the truth of God speaking to you? What in your mindbodily being in the world distinguishes the true from the false. Is it distinguishing our ego speaking from God's speaking, or how would you put it? Perhaps there is a clue in Kieran Cashell's suggestion to "feel its truth."[15] Your mentor H. Richard Niebuhr was talking about religious feeling as central to the meaning of our lives at the end of his life. Feeling, however, is not something you pursue, even though taking feeling with ontological seriousness would transcend Cartesianism.

If my mindbody is the ground of all my knowing and being, and Being is the ground of me, what is Being and how are we aware of it? Is it through feeling, tacit awareness, sensing reality within and environing the creative act of speech? In your lucid criticism of criticism's abstracting, totalizing, and monistic grip on things, you speak of "the penumbra of one's own mindbody"[16] that Cezanne seeks to recover that shows there is more to reality than criticism can ever apprehend. Is this Being? What of its nature is shown forth in your mindbodily existence? Is this the silence of the background of mystery we dwell within, or how would you speak it into form?

When you write of the Eucharist as deeper than belief, as the "*presently actual* body and blood of Jesus Christ; and that, if they are not, then the Son of God has nothing to do with the concrete person I am in *this* time and place,"[17] I am with you on the "real presence" of Christ in sacred space and time beneath belief, or as we Quakers would say "the presence in the midst," but, Bill, can you reflect on and say what in the world this means for you in your mindbodily existence? What are the clues of such presence? How do you know?

Among the nuggets that Jim Stines draws from your letter to Wally Mead is your talk about the resurrection. Since many Christians affirm the resurrection in a dualistic manner, can you, Bill, show how your affirmation is postcritical? What does it mean when you say "I believe in the resurrection of the body and the life everlasting" is "*enacting* and *identifying* . . . one of the features in the structure of the one and only world in which I actually live and move and have my being, *insofar as I recognize it as existing before God.*"[18] Can you reflect on and say what this structure is? I also love Paul's phrase, the whole in which "I live and move and have my being" (which recurs fifteen times in *RTG*), but what does it mean? Since many theologians have affirmed that they "exist before God" amidst dualisms of mind/body and spirit/matter, how do you mean it in a postcritical way? And what after all do you mean by "God?"

Oh I speak with unfettered audacity, in ways, when an apprentice, I never would have dreamed of. Yet you, Bill, sought through your own writing to elicit our first person mindbodily reflective life. My probing, therefore, in this dialogical form feels fitting. I ask questions because I do not know and want to know. I ask with passion because these questions matter, at least to me. In asking, Bill lodged in my mindbody may emerge as discovery of what he would say and of what I deep down want to say. Too late to engage him in dialogue? Perhaps, and yet:

> What the dead had no speech for, when living,
> They can tell you, being dead: the communication
> Of the dead is tongued with fire beyond the language of the living. [19]

How hard it is, especially in our Cartesian world (whether called "modern" or "postmodern"), to discover our deepest commitments. To carry on colloquy with Bill, who is part of me, of my embodied background (the "retrotensions" of my mindbody memory), is to solicit my own depths to speak. Perhaps, in my brash inquiry others may feel similar questions stirring in their depths that can emerge in authentic ways to speak from their mindbodies of the real beyond dualism?

I do not think, Bill, that what you would want is for us to repeat, if we can understand it, your own colloquy about mindbodily speaking and being, but for us to stand forth as the elusive "I" that each of us is "to find a new kind of discourse that can show forth the derivation of [all our concepts] . . . from the logos that enforms

our as-yet-unreflected mind-bodily sentience, orientation, and motility, anterior to duality. . . ."[20] At least this is where you have brought me with your brilliant life-engendering teaching. Your dialogical challenges have drawn me down and opened me up to dwelling in the logos of my body (stressing beyond Polanyi the bodyliness of the tacit dimension). You have left me, and many others, poised to begin to speak philosophically and theologically (whose separation you rightly reject[21]) what we see and hear as we live and move and have our being as mindbodies in the world—grounded in Being, before God.

It is within this mystery, as it comes to presence in Bill Poteat's first person Socratic teaching, as he irrepressibly elicited, flagrantly provoked, caringly midwifed my embodied reflective self, and lovingly recovered and nurtured my career as a dialogical teacher, that I want to say in this transient temporal moment, as the "I that I am" with my memories and anticipations, my eternal gratitude for the irrefrangible embranglement of Bill Poteat in my life—the little bit of him that I knew—through the grace, wit, brilliance, and irrepressible speaking and listening that was Bill.

Endnotes

[1]*Tradition and Discovery* 35:.2 (2008-2009): 51-52.

[2]William H. Poteat. 1994. *Recovering the Ground: Critical Exercises in Recollection* (*RTG*). Albany: State University of New York Press, 115-116.

[3]*Tradition and Discovery* 35:2 (2008-2009): 27.

[4]*RTG,* 6 and 171.

[5]*RTG,* 65

[6]*RTG,* 61-70.

[7]*RTG,* 169-185.

[8]*Tradition and Discovery* 35:.2 (2008-2009): 35.

[9]Michael Polanyi. 1958. *Personal Knowledge: Towards a Post-Critical Philosophy*. London: Routledge and Kegan Paul, 214.

[10]*Tradition and Discovery* 35:2 (2008-2009): 56. From *RTG* 4.

[11]Margaret Fell Fox, "The Testimony Concerning Her Late Husband George Fox." Mary Garman, et al, eds. 1996. *Hidden in Plain Sight: Quaker Women's Writings 1650-1700*. Wallingford, PA: Pendle Hill, 235.

[12]*RTG,* 141.

[13]*Tradition and Discovery* 35: 2 (2008-2009): 10 and 40-41.

[14]*RTG,* 91-92.

[15]*Tradition and Discovery* 35: 2 (2008-2009): 56.

[16]*RTG,* 150.

[17]*RTG,* 135; his italics.

[18]*Tradition and Discovery* 35: 2 (2008-2009): 41; his italics.

[19]T.S. Eliot, "Little Gidding," *The Four Quartets*. New York: A Harvest Book, Harcourt, Brace, & World, 1943; 1971. Lines 49-51.

[20]*RTG,* 167.

[21]*RTG,* 116-117.

William H. Poteat and the Convertibility of Logic and Love

Elizabeth Newman

ABSTRACT Key Words: William Poteat, ontology, mindbody, objective, subjective, relative, Michael Polanyi, post-critical, incarnation, transubstantiation, David L. Schindler.

My essay offers a personal reflection on Poteat as both a beloved teacher and philosopher. I suggest that Poteat's teaching and writing had to do most radically with describing an alternative ontology to the ones that have haunted both modern and postmodern thought. Poteat's ontology leads him to a profound embrace of the Incarnation and its liturgical celebration in the eucharist.

> These are only hints and guesses,
> Hints followed by guesses; and the rest
> Is prayer, observance, discipline, thought and action.
> *The hint half guessed, the gift half understood, is Incarnation.*[1]

Who

Although Bill Poteat retired from Duke in 1987, he remained one of my teachers throughout my four years there. I was fortunate to be among a group of students who continued to meet in his home to discuss what he was writing (the early drafts of *A Philosophical Daybook*) or what we were (for most, our dissertations). To this day, I treasure those times, both for what I learned and for the wonderful encouragement and friendship Poteat provided.

But if asked what exactly I did learn from Poteat, I would be unable to provide an easy answer. My experience was that of most who knew him. It is almost impossible to separate the work from the man himself. This was not because Poteat sought to aggrandize himself, but rather because he embodied so thoroughly what he sought to teach. Despite this, his teaching and philosophy are illusive. I remember another of his students saying, "I know Poteat is saying something important, but I'll be darned if I can figure out what it is." Yet, as the dust has settled over the years, some aspects of Poteat's teaching have become clearer. In what follows, I will attempt to describe how so.

What

I think to understand what Poteat is saying it is crucial to see that he is not only discussing *epistemology*. He is, more basically, describing an *ontology* that goes radically against the way modernity and late (or post) modernity typically conceive it. Readers of Poteat will be familiar with his repeated use of "mindbody" as a way of recovering the ground on which we walk, think, speak and so forth. This ground, according to Poteat, has been obscured by a "discarnate spiritualism" and by "the hypertrophication of the values of literacy." Disincarnate spiritualism positions the mind over against the body as in a Cartesianism in which the "notion of

mind *precedes* our notion of body and is indubitable …"[2] By the hypertrophication of literacy Poteat is referring to the dominance of a particular kind of seeing that inclines us to perceive of ourselves as spectators, even more as "a mere eye; in fact, a disembodied eye, which is oriented from no body of its own."[3] While such dualisms have been criticized many times over, they still pervade the air, Poteat states, "like chronic depression.[4]

Yet what exactly *is* the ground Poteat wants to recover? He describes it as "our sentient, motile and oriented mindbodies in the world that are the ground of all meaning and meaning discernment, whence all reflection derives—even the literature of gnostic dreams."[5] On the one hand, this might not seem particularly radical. After all, as noted, few today would embrace Cartesianism, or a radical disjunction between the mind and the body. Furthermore, do not various postmodernisms endlessly remind us that all theory is contextual and embodied? The categories of race, gender and class are invoked in a vast array of ways to unveil (or deconstruct) how thinking (mind) is conditioned by these categories (body). These, however, are very different project(s) than what Poteat is about.

As I see it, Poteat is pointing to how our "mindbodily being" is shot through with *meaning* and, as he says, meaning discernment. This indicates that the structure of how things are cannot be separated from "values." But "values" is a misleading word precisely because it has already been so deeply imbued with the assumptions of modernity. Modernity and late modernity often make "values" a matter of the will or, further, of subjective preference. At the same time, true knowledge is regarded as more objective. We can, for example, say that 2+2=4 since this is an obvious fact, but we will have a more difficult time having shared views on abortion. If we return to Poteat's description of the mindbody and meaning discernment, it might seem that his thought is only of minimal help. After all, we could say that, yes, there is meaning in a mathematical statement that derives from the "logic" of our mindbodies, but this mathematical meaning seems more "objective" or widely shared, than the kind of meaning-discernment related to our personal values. One might even argue that each mindbody being has his or her own "meaning discernment," a belief leading to relativism.

Poteat made it clear, however, that those who worried about "relativism" had missed something important in what he had to say. He writes that "*even the literature of gnostic dreams*" issues from the meaning discernment of our mindbodies. The pertinent point here is that our meaning discerning mindbodies can come up with inadequate and distorted accounts of our *being* in the world. The whole premise of Poteat's philosophy/theology is that this has in fact been the dominant case in the modern Western world. We suffer from a deeply fragmented sense of ourselves in the world (ontology), which has ushered in a deeply flawed epistemology.

To see more clearly what Poteat was about, we can turn to his friend Michael Polanyi and to Polanyi's description of knowledge as *personal*. Poteat denied being a "Polanyian," in the sense of claiming expertise on Polanyi's philosophy. Rather, he was inspired by Polanyi as he began his own meditations towards a post-critical logic. Thus Poteat begins *Polanyian Meditations* with a quote from Polanyi, "Can science be said to rest on specifiable presuppositions, be it on rules of correct procedure or on substantial beliefs about the nature of things?" As Poteat notes, Polanyi's question concerning how to *identify* beliefs is odd-sounding in the face of Enlightenment assumptions: "either one approaches inquiry free of any such beliefs; or one approaches it only in a state of lucidity about them."[6] As Poteat will go on to describe, "beliefs" are more deeply implicated in our being than we are wont to imagine. In fact, they are so "implicated" that we would cease to be if this were not so; we would cease to be alive. Even the beat of our hearts implies a meaning in the sense of a positive "logic" that orients us in the world of space and time. Our speaking (our grammar) relies upon a logic or "logos" that is shot through with meaning, as does a newborn's interaction with her mother's face and smile. The force of

the adjective "personal" captures this sense that all of who we are is oriented toward logic and meaning.

Such a summary (which only skims the surface of Poteat's thought) might still not seem particularly *radical*. It is helpful to remember, though, the dualistic alternative that Poteat is writing against. As one philosopher describes it, this is "a dualizing of intellect and will: the dichotomy [between objectivity and subjectivity] presupposes a *mechanizing of the intelligence* (e.g., the order of 'facts') and a '*voluntarizing' of the will* (e.g., the order of 'values')."[7] Poteat is offering an ontology that contrasts radically with the one that issues in a fact/value dualism. And he is saying that in the final analysis one cannot separate these. All facts are going to be grounded in our mindbodily quest and dependency on meaning (or "beliefs"), and all "values" are also already grounded in the mindbody "theories" about the world. Thus, "contrary to the subtly pervasive 'picture' in the regnant Cartesianism of this culture that conceptually estranges thought about our minds from thought about our bodies, formalized rationality—mathematics and formal logic—derives from and remains parasitical upon the 'hanging togetherness' and 'sense-making' of our integral mindbodily rootedness in the as yet unreflected world and in our unreflected 'thinkings' and doings in that world."[8]

Why

What is interesting to consider is *why* Poteat can say what he is saying. For me personally, this is the most fascinating aspect of Poteat's thought, and it is no doubt a complex question. Let me, however, venture at least a partial response that focuses on the question of ontology.

I was quite struck, recently, when I read an essay by David Schindler, discussing Theodore Hesburgh's vision of the modern university. Like Poteat in some ways, Schindler was arguing that Hesburgh's view was not radical enough, but rather left in place certain modern epistemological assumptions that were themselves the result of particular storied assumptions about the world. Schindler goes on to argue for the "convertibility" between fact and value, or mind and body, of, as Schindler states it, "logos " (order) and "love." To this end, Schindler writes: "From such convertibility it follows that the basic order of the universe—hence the primitive meaning of object(-ivity)—*is not mechanistic*; and the love —hence subject(-ivity)—*in its primitive meaning is not arbitrary*."[9] What Schindler means by "love" is not modern sentiment but rather the love displayed by the Triune God who calls not only us, but the whole universe into being. The word "convertibility," from my perspective, is absolutely crucial because it shows how we cannot ultimately separate the objective and the subjective. While for a variety of reasons a more explicit theology is not the focus of Poteat 's works,[10] he both discusses and shows his debt to the God who creates, covenants and becomes incarnate in Jesus Christ. The kind of order, logic and meaning that we are as "mindbodies" derives from the logic/logos given to all creation. Even more, the incarnation reveals (most fully) not only the *love* of God in Christ but also the *logic* of all of creation.

Years ago, when I first heard Poteat say that he had come to the realization that transubstantiation is true, I was baffled. At the time, I thought it had to do mostly with Poteat's understanding of language: language creates worlds and a word spoken "makes a world appear. " I do not doubt words create worlds, but I think Poteat's move toward transubstantiation had to do more fully with his ontology. If God is incarnate (and if God is faithful to God 's own *dabhar*), then the creation of the bread and wine to be the body and blood of Christ is as coherent (or logical) as the creation of the world itself. The same logic sustains both realities. Allow me to cite Poteat at length:

Then you believe in the doctrine of transubstantiation? Well, no. What I believe—and I do not think of it as something I believe, it goes much deeper than that, in fact, all the way to the bone—is that the bread and wine are the *presently actual* body and blood of Jesus Christ; and that, if they are not, then the Son of God has nothing to do with the concrete person I am in *this* time and place; and if this be so, the whole of Christianity is but an elaborate system of symbols at no point engaged with the actual fabric of this world.

I vividly remember Poteat once saying to me, "Beth, you are called to a place where there are no foundations." Poteat believed that we were all, like Abraham, called by a Holy God to places of radical faithfulness. His own life and thought witnessed profoundly to the logic of this Divine love.

Endnotes

[1] T. S. Eliot, "The Dry Salvages, V," in *Four Quartets*, http://www.tristan.icom43.net/quartets/salvages.html, my emphasis.

[2] William H. Poteat, *The Primacy of Persons and the Language of Culture* (Columbia: University of Missouri, 1993), 31.

[3] Ibid., 27

[4] Ibid. More fully, Poteat states "Cartesianism as an explicit philosophical doctrine is virtually without effect in this culture. It functions however at a tacit level like a repetition compulsion; it is ubiquitous and pervades the atmosphere of our life like chronic depression."

[5] William H. Poteat, *Recovering the Ground, Critical Exercises in Recollection* (New York: SUNY, 1994), xiii.

[6] William H. Poteat, *Polanyian Meditations: In Search of a Post-Critical Logic* (Durham: Duke University Press, 1985), 11.

[7] David L. Schindler, *Heart of the World, Center of the Church, Communio Ecclesiology, Liberalism, and Liberation* (Grand Rapids, MI: Wm. B. Eerdmans, 1996), 163. My emphasis.

[8] *Polanyian Mediations*, 9.

[9] Schindler, 166. My emphasis.

[10] At the 1993 AAR session with Poteat as invited guest, he mentioned his concern that theology was at times too easily invoked or too easily (and thus mistakenly) subsumed into the work of Polanyi or Wittgenstein.

Electronic Discussion List

The Polanyi Society supports an electronic discussion group that 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-mail to Doug Masini (Douglas.Masini@armstrong.edu) and someone will see that you are added to the list.

Bill Poteat's Post-Critical Logic
and the Origins of Modernity

Murray Jardine

ABSTRACT Key Words: Polanyi, Poteat, logic, visual experience, oral/aural experience, Greek thought, Hebraic thought.

In Polanyian Meditations: In Search of a Post-Critical Logic*, Poteat draws upon Polanyi to explicate what he calls an "oral/aural logic," which he thinks informs Polanyi's thought and which is different from the conventional "visual logic" of the Western philosophical tradition, and then argues that this oral/aural logic is implied in the Hebraic understanding of reality. This idea is a key to understanding the genesis of the modern worldview, which can be conceptualized as involving certain elements of the Hebraic worldview distorted by an excessively visual orientation.*

My first encounter with Bill Poteat (or "Poteat," as he liked his students to call him) was in the Fall of 1985, when I began my graduate studies in political theory at Duke University. As an undergraduate at Texas Tech I had studied under Clarke Cochran, a political theorist from Duke who introduced me to Michael Polanyi's work and who enthusiastically encouraged me to take Poteat's class on *Personal Knowledge*. Upon arriving at Duke I looked at the course schedule and saw that Poteat was indeed teaching a graduate seminar, so I immediately signed up. The class had a hopelessly vague title (something like "Special Problems in Religion") so I had no idea whether we would be reading Polanyi or not. As it happened, we spent the semester reading the page proofs for *Polanyian Meditations: In Search of a Post-Critical Logic*, which was actually published late in the semester and which has turned out to be perhaps the single most important book influencing my own intellectual development.

When I arrived at Duke the burning question in my own mind was one that has become *the* central question for postwar political theory (and certainly one of the central questions for most contemporary humanistic disciplines), namely, the genesis of the modern age. How did the modern worldview, with its ultimately nihilistic logic, develop? We certainly cannot escape from modernity until we understand where it came from. *Polanyian Meditations* seemed to answer this question—or at least, some of its secondary arguments combined with ideas developed by Poteat in our wide-ranging class discussions apparently provided a framework for doing so. This essay will explicate a critical aspect of Poteat's work, and its relation to Polanyi, that is primarily only implicit in *Polanyian Meditations* itself.

Stated most crudely, Poteat's argument is that modernity is the outcome of the incoherent medieval synthesis of Greek and Hebraic thought. It should immediately be stressed that he is *not* making the argument, usually associated with Adolph Harnack and other liberal Protestant theologians, that a pristine, purely ethical primitive Christianity was corrupted by Greek metaphysical concepts. Rather, Poteat's argument is that there is a "Greek metaphysics" and a "Hebraic metaphysics" and, as he so often said in class, "the Greeks got it wrong and the Hebrews got it right." What, then, is the difference between Greek metaphysics and Hebraic metaphysics?

As a first approximation, Poteat can be understood to say that the Greek, or at least Greek philosophical, model of reality is drawn primarily from visual experience, while the Hebraic model of reality is drawn primarily from oral/aural experience. Somewhat more specifically, Poteat argues that the Greek philosophical conception of reality is heavily shaped by the experience of literacy. Here he draws upon the extensive literature from anthropologists, psychologists, literary critics, and others about the differences between oral and literate cultures. This literature draws a sharp distinction between premodern cultures in which only a small percentage of the population is literate and modern societies in which, thanks to the printing press, most people have at least basic reading and writing skills. It argues that modern literate cultures are much more visually oriented (since written communication primarily or exclusively engages one's eyes) while premodern oral cultures (communicating primarily through speech) are much more attuned to sound. This has many critical phenomenological implications, as visual experience is quite different from oral/aural experience, and indeed much of *Polanyian Meditations* is concerned with examining these differences. A further critical difference between these cultures is that oral cultures typically think in highly personal terms (since communication in such cultures normally involves actually talking directly to another person) while literate cultures generally think in more impersonal terms (since literate communication generally involves reading impersonal texts). Finally, the ability to perform abstract analysis is greatly improved by literacy. It is much easier to dissect an argument when can look at it whole, as a written page allows, than when it is being spoken. Oral cultures have only a very limited capacity for analytical thought. This difference has a further important implication: oral cultures tend to express ideas in poetic and narrative terms, while literate cultures are more likely to employ logical argumentation.

The classical age of Greece represents a special case in this analysis. Writers on oral-literate differences point out that the invention of the Greek alphabet allowed for a significant expansion of literacy. The Greek alphabet is much easier to learn than such complicated systems as hieroglyphics or even the Semitic alphabet (which does not indicate vowels) so that most male members of the upper classes could achieve substantial literacy, thus allowing for a "critical mass" necessary for the formation of a literate culture, with a greater capacity for analytical thought. The Greek philosophers were products of this earliest literate culture.

Poteat argues that the Greek philosophers conceived of reality on the model of a written text: the universe is characterized by a (large but ultimately) finite set of possibilities which could, in principle, be exhaustively described as derivative from some fundamental, impersonal principle of order, and words get their meaning by corresponding to particular aspects of the ultimately static structure that constitutes reality. The Greeks certainly did not *explicitly* use the written text as their model of reality–indeed, Plato explicitly deemed writing to be inferior to speech–but, Poteat argues, the experience of living in a literate environment caused them *tacitly* to draw upon the static and impersonal characteristics of the written word when formulating their conception of the world. The Hebrews, by contrast, conceived of reality on the model of a spoken word, as is perhaps most obviously illustrated by the first chapter of Genesis. The universe is thus dynamic, as spoken words are when they issue from the mouth of a person, and personal, since spoken words always issue from the mouth of particular persons. Words do not simply label things that already exist but actually create things, and from this it follows that the Hebraic universe, unlike the Greek universe, has infinite possibilities, or stated differently, is much more radically contingent.

Poteat's argument then, could be described (again, as we shall see shortly, only as a first approximation) as saying that Western thought since the Middle Ages has been characterized by a kind of "parallax" created by the incoherent mixture of these two very different models in Christianity. To be sure, the analysis of *Polanyian Meditations* focuses primarily on the effects of a hypertrophied visual orientation, and certainly Poteat argues

that (thanks to the printing press) visual experience has been predominant in the modern age, but the subordinate elements of the Hebraic oral/aural model do bring about the result that the specifically modern visual consciousness is quite different from that of the Greek philosophers.

One objection that might be raised at this point is that although the differences between oral and literate mentalities might explain the differences between the literate culture of classical Greece and the oral culture of ancient Israel, they do not really explain the differences between Israel and its pagan neighbors, which were also, of course, oral cultures. And indeed a closer reading of Poteat indicates that ultimately he goes beyond the initial analysis deriving from the literature on oral and literate cultures: his final conclusion is that orality and literacy are ultimately not decisive but only contributing factors in the differences between Greek and Hebraic worldviews. The Greeks, he argues, ultimately took the growth and decay of natural fertility and the revolutions of the heavenly bodies as their model of order in the world, as indeed all pagan cultures did; the Greek philosophers merely reconceptualized this model in the abstract, impersonal manner characteristic of literate thought. The Hebrews, by contrast, took as their model of order the actions of a paradigmatic personal speaker, one always faithful to his word. And, in terms of the issue raised above, the influence of the Hebraic model of reality on modern consciousness, Poteat argues that modern Western notions of personhood are very much derived (although in a distorted way) from this model. In any case, Poteat is ultimately saying that the basic model of reality of the pre-philosophical pagan cultures was the rhythms of the natural world, as conceived by an oral culture; the basic model of reality for the Greek philosophers was the same nature, as conceived by a literate culture; and the basic model of reality for the Hebrews was the speech act, as conceived by an oral culture. The decisive difference between Greek and Hebraic metaphysics lies in their primordial models of reality.

Poteat's (implicit) analysis of the genesis of modernity can now be restated roughly as follows: the full development of the implications of the Hebraic worldview was thwarted by the use of Greek philosophical concepts, perhaps not so much during the development of basic Christian doctrines in late antiquity as during the Middle Ages, specifically in that the static, impersonal concepts of Greek metaphysics could not allow Western philosophy and theology to make sense of the dynamic, personal picture of reality actually at the core of Christianity.

More specifically, Poteat argues that one can talk about both "visual" and "oral/aural" logics. The visual logic developed by the Greek philosophers essentially considers the eternal relations between static entities (that is, entities conceived on the model of a written word existing statically on a page); in this logic a necessary relation cannot coexist with contingency. On this model, then, reality can have only finite possibilities, as noted above. But the oral/aural logic which he claims is implicit in the Hebraic picture of reality can, because of its basis in the dynamism of the speech act, allow for the coexistence of necessity and contingency. (This is a rather complicated argument that space does not allow me even to summarize here; see *Polanyian Meditations*, chapters IV-VII.) Thus the world can be radically contingent upon God but still subject to necessity–the necessity of his faithfulness. Another way to state this is that, for Poteat, or rather for the oral-aural logic Poteat attempts to explicate, limits can still exist even in a situation of infinite possibilities.

It should be noted here that Poteat is not arguing that there is something "wrong" with the Greek visual logic; he is simply saying that it has significant limitations. It is the appropriate tool for certain types of problems, such as those found in mathematics, dealing with the eternal relations of static entities. But it is inappropriate and perhaps even dangerous when applied to other types of issues. A more conventional way to state this could be that the Greek philosophers' major mistake was in conflating logical and ontological categories. They (mis)took

the visually derived logic appropriate to certain types of static relations as a general description of reality.

In any case, modernity, then, for Poteat, is the end result of a process in which medieval culture becomes more aware of the contingency implied by the biblical understanding of God's action but is unable to conceptualize any necessary limits on that contingency because the (visual) concept of necessity inherited from the Greeks cannot coexist with contingency–eventually leading to the limitless contingency, that is the nihilism, of late modernity. To put it another way, medieval thought lacked the tools necessary to conceptualize the necessity of God's faithfulness, eventually leaving only the absolute contingency of a world created by arbitrary will. The development of a fully literate (that is visual) culture following the invention of the printing press simply accelerated this process, as the residual (or rather, never really fully comprehended) elements of the Hebraic oral/aural logic became completely inaccessible to the Western mind.

It should be stressed that Poteat is not fingering literacy as the "culprit" in this scenario, much less advocating anything so absurd as returning to a non-literate state as a solution. His analysis would seem to imply that the development of universal literacy would not have led to nihilism if the oral/aural logic implicit in the Bible had been properly explicated during the Middle Ages. And indeed, returning to the issue discussed above, where I mentioned that ultimately Poteat sees the difference between the Greeks and the Hebrews as one of taking the cycles of nature as opposed to the speech act as the basic model of reality, three important observations could be made: First, a literate culture more thoroughly informed by the Hebraic model could explicate that model's oral/aural logic in a way that a less analytic oral culture could not; modernity became nihilistic not exclusively because it was more visual but because that increased visuality exacerbated the tendencies already present (as in, for example, late medieval nominalism) toward a picture of the world as purely contingent. Second, the Greek philosophers were perhaps able to explicate only a limited visual logic because their pagan background did not provide them with the model of the speech act as a possible model of analysis; they were able to exploit the analytic possibilities opened up by literacy only in a very limited, and ultimately unbalanced, way. Third, and similarly, the tendency of medieval Christian philosophy and theology to use only the Greek logical model could have resulted from the residual paganism in medieval culture; the incomplete penetration of the Hebraic model of reality into the medieval mind could have prevented a full recognition that Greek logical concepts were not appropriate tools for analysis beyond a limited range of issues.

On Poteat's analysis, then, what is needed to escape the nihilism of late modernity is a more complete explication of the dynamic oral/aural logic sketched out roughly in *Polanyian Meditations* and its application to philosophical, theological, ethical, and political issues–with, of course, his all-important caveat that this is most emphatically not a merely "intellectual" exercise but rather a project that requires a thoroughgoing reorientation of our entire mindbodily being.

Finally, what does all of this have to do with Polanyi? The reader may have already guessed. The central argument of *Polanyian Meditations* is that Polanyi begins to explicate such an oral/aural logic in the context of epistemology and philosophy of science–but that he doesn't realize that he is doing this and that his attempt is not entirely successful because he is still saddled with the inadequate vocabulary of traditional (visual, or rather literate pagan) Western philosophy. More specifically, Poteat observes that Polanyi's formulations tend to conflate logical categories (which we normally understand as atemporal) and causal categories (which we typically take to be temporal). What Polanyi is attempting to do with this awkward vocabulary, says Poteat, is to convey a sense of the world being ordered temporally, as it would be understood from an oral/aural paradigm, rather than being ordered atemporally, as it would be seen from a visual standpoint. In fact, it was Poteat's puzzlement over this awkward vocabulary that began the process of uncovering the "deeper wit," as he calls it,

informing Polanyi's critique of modernity. And in uncovering this "deeper wit" Poteat has made explicit what Polanyi is doing tacitly, placed it in a larger historical context, and thus begun to recapture and explicate the oral/ aural logic of Hebraic metaphysics that can be our only escape from nihilism.

Notes on Contributors

R. Melvin Keiser (elizakeiser@aol.com), Professor Emeritus of Religious Studies at Guilford College (Greensboro, NC) was an ocassional early contributor to *TAD* and *Convivium;* he is author of two books on H. Richard Niebuhr's postcritical thought (see review article by Charles McCoy and Mel's response, *TAD* 24:1 [1997-98]: 6-19), a collection of Stanley Hopper's essays on religion and literature, and selections of an early Quaker leader, Isaac Penington (reviewed in *TAD* 33:3 [2006-07]: 63-64), he is currently writing companion volumes on the meaning of life from a Quaker perspective (aka philosophical theology), exploring resonances between the tacit dimension and meditative silence, in response to his students over the years saying: "You have asked us what we think, now tell us what you think." With his wife, he is co-director of Common Light Meetingplace in Black Mountain, NC, a Quaker-based spiritual adult education center for transformative dialogue.

Paul Lewis (lewis_pa@mercer.edu) is an Associate Professor in the Roberts Department of Christianity at Mercer University. He also directs Senior Capstone Program in the College of Liberal Arts and is one of the lead faculty for the Phronesis Project, a center devoted to exploring and promoting character development, professional formation, and practical wisdom. He has authored many journal articles and book chapters in theology and ethics and frequently reviews books for *TAD*; he is the *TAD* Associate Editor.

Phil Mullins (mullins@missouriwestern.edu) the *TAD* editor since 1991 and a coordinator of the papers at the Polanyi Society annual meeting for several years before 1991, has interacted with a large number of former Willaim Poteat students who belonged to the Polanyi Society. Mullins is Proffessor Emeritus at Missouri Western State University.

Beth Newman (bnewman@btsr.edu) is Professor of Theology and Ethics at the Baptist Theological Seminary at Richmond. In 2009, she was a Luce Fellow in Theology and worked on a book project titled, "Attending to the Wounds on Christ's Body: the Politics of Teresa's Ecclesial Vision." She has published a book on hospitality (*Untamed Hospitality: Welcoming God and Other Strangers* reviewd in *TAD* 36:1, 72-74) and numerous articles in theology and ethics including a couple in *TAD* (20:1, 13-26 and 29:1, 60-73).

Kyle Takaki (ktakaki@hawaii.edu) is a lecturer at the University of Hawaii at Manoa and Kapiolani Community College. In addition to a strong interest in Polanyi, his areas of specialization are Philosophy of Science (especially Philosophy of Biology) and philosophical issues relating to Complex Systems. Takaki recently completed his Ph.D. at Manoa, where he apprenticed under two Deweyans and Polanyians, Ron Bontekoe and Jim Tiles.

"Thanks For Everything, Poteat!": An Intellectual (But Personal) Autobiography

Araminta Stone Johnston

ABSTRACT Key Words: William Poteat, modernity, postmodernists, critical theorists, post-critical, New Criticism, Michael Polanyi, *Personal Knowledge*, personal knowledge.

These comments reflect upon my doctoral study with William Poteat as a nontraditional student between 1986-92 and also upon the academy and colleageality vis a vis Poteat and "Poteatians."

I was one of Bill Poteat's "last students." I entered the Ph.D. program in Religion and Culture at Duke in the Fall of 1986, and Poteat retired at the end of the following semester. I had just finished a Master's degree in Religion at Wake Forest the preceding spring. I knew that Poteat was near retirement when I entered, but he and I talked about that, and he agreed to continue to work with me until I finished my degree, which turned out to be Spring 1992.

My situation was somewhat unusual: I was an older student with a husband and two children at home in Charlotte. My husband was well settled in his job and our children in their schools, and we really had no interest in moving to Durham where he and I had been undergraduates at Duke some years earlier. So every semester from the Fall of 1986 to the Spring of 1988, I drove to Durham for my classes, spent a couple of nights in a cheap motel, and then drove back home. Thus it was inevitable that my contact with Poteat during that time was limited primarily to classes with him, classes that were often held at his home, especially after his official retirement.

I was friends with a number of his earlier students—men who had finished their degrees in the late sixties or early seventies. I knew from them that Poteat was much closer to some of his students than others — something that was once described to me by one of those men as "concentric rings" of students, a sort of "inner ring" of those closest and an "outer ring" of the others. While I was Poteat's student it was true that there was one student that he was closer to than the rest of us (a student who had also studied with Poteat as an undergraduate), but I don't think any of the rest of us ever felt seriously "shut out" when it came to Poteat's engagement with us.

I begin with this personal detail because in what follows I want in part to respond to Robert Osborn's 2008 *Tradition and Discovery* article entitled "Bill Poteat: Colleague?" (35:2, 44-47). There Osborn wrote,

> My colleagues and I at Duke University recognized that Bill was an impressive and remarkable man…. He was an attractive person—brilliant, widely read, very charming, even winsome, and a scintillating intellectual. However, he was a mystery. I don't think any of us in the Department of Religion knew him or began to know him" (44).

Osborn continued,

> During all the time he was with us—some 27 years . . . — we never heard his story…. It seems, as I look back, that he did not share his self-understanding or his professional story with any

of his colleagues. He was simply absent in spirit and mind, and … generally absent in body. He spent little time in the Department precincts except for his meetings with students and for mandated department meetings that he chaired with considerable success. Otherwise he was minimally present. We rarely had coffee, not to mention a beer, together; we shared no extracurricular time that I recall. He did not attend meetings of the American Academy of Religion, regional or national, even when colleagues were performing. In short he was not really a colleague in the sense that we normally think of a colleague. In fact, one of my colleagues who was also Bill's and whom I asked about Bill as a colleague, retorted, "Bill as a colleague? That's an oxymoron" (44).

But as Osborn went on to make clear, "Bill was first and finally a teacher" (45). Indeed he was, and those of us who had him as a teacher throughout his long career were indeed blessed to have such a one. Although —at least in my view, and others may disagree—as I reflect on the experience almost eighteen years later, the blessing is a mixed one.

But I wouldn't trade it for another.

As Osborn wrote about Poteat, "The focus of his teaching was not the history or tradition of philosophy but rather his own philosophy which appears to have been developing in and through his teaching" (45).

Yes, it is true that in his classes we read Ricouer's *Freud and Philosophy: An Essay on Interpretation*, and Kierkegaard, especially *Fear and Trembling*, and Wittgenstein's *Philosophical Investigations*, and, of course, Michael Polanyi's works, especially *Personal Knowledge: Towards a Post-Critical Philosophy*. My copy of *PK*, like, I suspect, that of my confreres, is not only full of marginal notes but dog-eared, battered, and patched.

Oddly, for a reason central, I think, to being Poteat's student, it is Ricoeur's *Freud and Philosophy* that in one way stands out most in my memory. *Freud and Philosophy* is a ponderous tome, and it was the assigned reading for the first class I had with Poteat. As a class of mostly newbies, we struggled and struggled with it. Some years later, I read a much smaller volume of Ricoeur's and said to a friend, another former student of Poteat's, "Why didn't he just have us read this instead? Ricoeur is doing the same thing in here that he does in *Freud and Philosophy* but in many fewer words!" The "thing" that Ricouer was doing and that Poteat wanted us to *experience*, not just "see," was Ricoeur's not-so-latent Cartesianism. Poteat was convinced that in order for us to know something different from the Cartesian water that we swam in, it was necessary for us to struggle and struggle; his choice of *Freud and Philosophy* rather than the much shorter book (the title of which I have now forgotten) was deliberate, I believe. It was only because I had *struggled* through *Freud and Philosophy* with Poteat and my fellow students that I could later see the same pattern in the shorter book.

After Ricouer came Wittgenstein, Kierkegaard, Polanyi, and Poteat's own *Polanyian Meditations*, and the insights into the subject-object dichotomy and the "disembodied ego-centrism of Cartesianism" gradually became easier.

I believed then, and still believe now, however, that I was somewhat less captive to modernity and its blandishments than some of Poteat's students. I had grown up in Oxford, Mississippi in the fifties and early sixties,

the daughter of Phil Stone, a lawyer with two undergraduate degrees—one from the University of Mississippi and the other from Yale—and two law degrees from the same institutions. My father had been born in Oxford in the late nineteenth century and had been a close friend and literary mentor to William Faulkner in their early years. In fact, as young men Faulkner and my father often took long walks together sharing stories and tall tales about the early efforts at "modernization" in Lafayette County, stories that Faulkner transmuted into his work, especially his Snopes trilogy (*The Hamlet, The Town,* and *The Mansion*) which he dedicated to my father. (One of the dedications reads "To Phil Stone, He did half the laughing for thirty years." The two of them, one a talker, the other a writer, but neither an actor, seem to have found ironic humor to be the best way of dealing with the encroaching modernity that they saw around them.) My mother, Emily Stone, was an aspiring fiction writer herself and a sworn foe of the discipline of philosophy. Indeed, both my parents believed avidly that truth is to be found in stories, including the ones that they told with relish—not in theories and *certainly* not in academic philosophy. This view was literally my mother's milk. And so the combination of my somewhat premodern parents and our fairly premodern town insulated me to a certain degree from modernity itself.

But, if I had been somewhat insulated before, that came to an end when I arrived at Duke as an undergraduate in the Fall of 1966. I came believing that stuff about truth residing in stories, and I liked to read —so naturally I became an English major.

And encountered New Criticism, a *modern* literary approach if there ever was one. We weren't reading to discover "truth" (of all things!), but rather to discover how the disembodied author (with no personal history worth noticing) had constructed metaphors, similes, and plot. Reading that way certainly wasn't very interesting, but at the time I didn't have the understanding to know why this way of reading seemed so meaningless.

But one way in which I was a bit more modern was my fine adolescent disdain for religion, especially the Methodist variety. This bit of modernity I had also imbibed from my mother (likewise, one of her few concessions to modernity). So, as I learned later, the unfortunate result of this influence meant that it never occurred to me that there might be someone like Bill Poteat in the Religion Department at Duke. And so I missed my chance then.

Time brings change. Fifteen years later, I was pretty sure that I wanted to do graduate work in religion, but my nine hours of religion at Duke (three of them the still-required Bible course) hardly qualified me for a graduate program, so I got busy with "remedial work." As part of that, I encountered Hannah Arendt's *The Human Condition,* taught by Ed St.Clair, one of Poteat's former students, in the Religious Studies Department at the University of North Carolina at Charlotte. (Poteat himself regularly taught this text to undergraduates at Duke.) I was fascinated with Arendt, but so completely innocent of *any* philosophical training, I could hardly penetrate her work. When it came time to write a paper for the class, I seized on the one thing that I thought I could say something about: her discussion of stories.[1]

So thanks to Arendt and St.Clair, I began to realize that there was a diagnosis of and a treatment for the chronic complaint I had only vaguely realized I suffered from: a dis-ease with modernity itself. St.Clair encouraged me to pursue the graduate work with Poteat, and so I did, as I indicated above.

What an experience! And I use the word "experience" deliberately. There was very little "mastery of content" in Poteat's classes. Instead he trained us to think in a *deeply* critical way about modernity, although certainly not in the way that the contemporarily fashionable postmodernists and critical theorists were thinking.

In fact, Poteat liked to accuse them of cultivating *frisson* for its own sake when they made ostentatious proclamations about such matters as "the slipperiness of language" or claimed that language is a prisonhouse. As he pointed out, rather than moving beyond the assumptions of modernity, these writers seemed to be merely articulating its "flip side": if modernist assumptions about the value of objectivity, science, and the rest are false, then the only thing left for us is despair. For Poteat, the answer to modernity was not postmodernism; instead it consisted in a post-critical approach that valued among other things Polanyi's personal knowledge and rejected disembodiment and the split between mind and body.

And what did that mean? Well, it's not easy to explain, as I know from having attempted it a number of times. When, for example, I have tried to break my students from speaking of "objective" and "subjective" knowledge and tried to get them to understand and think of "personal knowledge," I have only been successful in getting them to use the latter term as an apparent concession to what they seem to assume is an individual quirk of mine. I would feel more frustrated by this if I had not had the pleasure of once being able to discuss it with Sir John Polkinghorne, whose work is influenced by Polanyi, and learned that he agreed with me about the near-impossibility of getting undergraduates to understand the concept.

But the difficulty is by no means limited to undergraduates. In response to questions from some of Poteat's colleagues and my own, I have made attempts to explain post-critical philosophy, and the results were no more encouraging. (Although the failure was perhaps mine; Murry Jardine has done an outstanding job of giving a brief explication of Poteat's thought in this issue.) It does appear, however, that the *struggle* and a serious commitment over time to reading, thinking, and talking are required to understand and explicate.

So in response to Osborn on Poteat as a colleague, I would say that maybe the difficulty was not so much with Poteat, but instead with his "colleagues" themselves. Of course such a difficulty is understandable. Scholars immerse themselves in their own small area of specialty and, other than coffee or a beer and academic gossip and politics, they are unlikely to have serious intellectual conversations with anyone except those whose specialty resembles their own.

And then there was the additional difficulty that Poteat was not a scholar. (He didn't even go to American Academy of Religion meetings to listen to papers on smaller and smaller academically fashionable topics written by those hoping to win tenure!) Instead, Poteat was a thinker - an embodied one— who was willing to do his thinking out loud for those who were willing to commit to the struggle and attempt to think along with him.[2] And those were his students, and so he *was* a teacher. And we're grateful to him for it.

But I wrote above that this blessing was a mixed one. When I finished my degree and gained colleagues and students of my own, I discovered that I really had nothing - no *content*—to teach to undergraduates. For years I scrambled mightily to master the content needed to teach the undergraduate courses that my colleagues wanted taught in institutions less selective than Duke. The result has been that I have had little opportunity to pass on the kind of insight that Poteat gave to me.

The advantage I had, of course, was that I had had the model of Poteat, someone willing to think and learn along with his students. But my colleagues have never seemed to appreciate this capacity much; the issue was what did I *know* and what *information* could I transmit to my students. (I realize that I may sound bitter when I write this, although I believe that I'm simply being realistic about the academy and what kind of teaching it

generally wants from colleagues.) But as I also wrote above, I wouldn't trade this mixed blessing for another one. Few graduate students have the experience those of us who were Poteat's students have had and many probably wouldn't want it. That experience taught us to think in a *deeply* critical way about modernity and offered us in Poteat's post-critical philosophy an effective treatment for modernity's diseases. But yes, we're an odd bunch.

When I heard that Poteat was dying, I wrote him a note that said merely, "Dear Poteat, Thanks for everything." I was confident he would know what I meant.

Endnotes

[1] In Hannah Arendt, *The Human Condition* (Chicago: University of Chicago Press, 1958) Chapter IV, "Work," in Section 23, "The Permanence of the World and the Work of Art."

[2] When I went back to my copy of *The Human Condition* to find the section in which Arendt speaks of stories, I noticed that this is also the section in which she distinguishes between thinking and cognition. There she says,

> Thought and cognition are not the same. Thought, the source of art works, is manifest without transformation or transfiguration in all great philosophy, whereas the chief manifestation of the cognitive processes, by which we acquire and store up knowledge, is the sciences. Cognition always pursues a definite aim, which can be set by practical considerations as well as 'idle curiosity'; but once this aim is reached the cognitive process comes to an end. Thought, on the contrary, has neither an end nor an aim outside itself, and it does not even produce results. Not only the utilitarian philosophy of *homo faber* but also the men of action and the lovers of results in the sciences have never tired of pointing out how 'useless' thought is - as useless as the works of art it inspires (170).

Her statement, it seems to me, has relevance to Poteat vis a vis the academy— a place where much more cognition than thought goes on, and not just in the sciences.

WWW   Polanyi Resources

The Polanyi Society has a World Wide Web site at http://www.missouriwestern.edu/orgs/polanyi . In addition to information about Polanyi Society membership and meetings, the site contains the following: (1) digital archives containing all issues of *Tradition and Discovery* since 1991; (2) a comprehensive listing of *Tradition and Discovery* authors, reviews and reviewers; (3) the history of Polanyi Society publications, and information on locating early publications not in the archive; (4) information on *Appraisal* and *Polanyiana*, two sister journals with special interest in Polanyi's thought; (5) the "Guide to the Papers of Michael Polanyi," which provides an orientation to archival material housed in the Department of Special Collections of the University of Chicago Library; (6) photographs of Polanyi; (7) links to a number of essays by Polanyi as well as audio files for the McEnerney Lectures (1962) and Polanyi's conversation with Carl Rogers (1966).

Poteat Changed My Life

John Berkman

ABSTRACT Key Words: William H. Poteat, post-critical, Wittgenstein, religion

These short remarks are a belated expression of thanks for the gift in my life that was Poteat. When Poteat died, I was spending time at a Trappist monastery, and never got word until after the funeral. I greatly regretted not being there. While I had the opportunity to tell Poteat during his lifetime how much he meant to me and the wonderful gift he gave to me, after his death, I never got or took the opportunity to tell that to others. This is my very belated attempt so to do.

I first heard about Poteat shortly after I arrived at Duke in the fall of 1987. A couple of fellow students in a Hauerwas seminar (Araminta Johnston and Beth Newman) who were a year ahead of me in the program told me about a fantastic seminar they had had the previous semester on Wittgenstein with a Professor Poteat. Having been introduced to—and smitten by—Wittgenstein's thought as an undergraduate at Toronto and Oxford, I was enthusiastically interested. After saying I would sign up the next time the course was offered, they told me that Poteat had just retired. I eventually learned that some of these students were continuing to work with Poteat, some doing reading courses with him. This evolved into a colloquy, and before long I was invited along to participate. I was intrigued and became a part of the group, and it changed my life.

From 1988 to 1993, off-and-on but mostly on, I was part of a colloquy at Poteat's house. After a couple of years, the students who had originally invited me left Durham, and I had the pleasure of inviting various and sundry people (mostly graduate students) to the group. Over the six years or so that I was a part of the group, it included Araminta Johnston, Beth Newman, Murray Jardine, Rob Baird, Gail Hamner, Randy Styers, Janine Crawley, Steve Long, and Jim Fodor. In terms of chronology, Johnston, Newman, Jardine and I were regular members relatively early on with Baird participating on occasion. After Johnston and Newman left around 1990, Jardine and I continued on joined by Hamner and for a while by Styers. In the academic year 1992-1993, Long, Crawley, and Fodor joined the group. I left Durham in the summer of 1993, and to my knowledge the colloquy did not continue beyond 1993.

One unfortunate part of my personality is that I have a terrible memory for details (I may well have the above chronology wrong). But what I do remember well is how over those years Poteat instructed and inspired me to develop as a thinker. I use the term "thinker" deliberately. Although Poteat was surely a scholar and an academic, he was most and primarily a thinker. By "a thinker" I mean that Poteat was primarily concerned to investigate the most fundamental questions of what it means for us to be human persons and to live and dwell in the world. Wittgenstein was a key interlocutor for Poteat. For Poteat, like Wittgenstein, thought that professional philosophy more often obscured than illuminated the human condition. For Poteat, it was specifically the critical project of Cartesian modern philosophy (that is, the assumption that skepticism is the first obstacle to be solved if we are to come to a true understanding of ourselves and our place in the world) that had to be overcome. By "overcome," Poteat wanted us simply to refuse to accept that project from the get go, and begin in a very different place. He displayed both the untenable assumptions and the devastating consequences of the modern critical project. Hence, Poteat's "post-critical" investigations.

But while I say that Poteat instructed and educated me, this was not by lecture or any other didactic means. So how did he educate me? Perhaps the best way to explain this is to begin with the *modus operandi* of the colloquy. Although over the years we had the privilege of reading one of Poteat's books in manuscript form (*Post-Critical Investigations* – later published *as A Philosophical Daybook*) in the spring of 1989, the primary and recurring texts for the colloquy for the duration of my time with it was the work of Wittgenstein, including *Philosophical Investigations*, *On Certainty*, and *Culture and Value*. However, we also read variously from other authors, including e.g. Kierkegaard's *Either/Or*, O.K Bouwsma, Ong, and various essays by Poteat, and at times presented to each other our own works in progress.

The first thing to say about how the colloquy operated is that Poteat's way of approaching texts was revelatory for me. Although we were to read something (typically something rather short) from, for example, Wittgenstein prior to our meeting, we were not expected to "figure out" much less be prepared to give "the meaning" of the text, and certainly not give a tidy summary of it. Participants were expected to simply have questions or comments about the text, or could raise insights inspired by the text. Typically, one participant would prepare a couple of pages of reflections to start the discussion. In our discussions, we would cover as much or as little of the text as the conversation naturally allowed. We never hurried to "cover" the reading, but pored over passages and paragraphs until each had had their fill of it. In this I think the group was true to Wittgenstein's wish that his work be read slowly. It was also incredibly liberating. On the one hand, we were allowed to spend the whole session on a sentence or two from a text. On other days, we might skip over most or all of the reading —if no one wanted to raise questions or make comments about it—and might well decide to discuss some other philosophical issue or problem that was on someone's mind. In this way, the sessions also sometimes functioned as (a Wittgensteinian) therapy, with different participants "on the couch" at different meetings.

A second point about the colloquy was that while we thought philosophically, we were to come at the texts and philosophical problems "wholistically," that is, with our whole being. In these sessions, there was not "a" much less "the" meaning of the text to be "gotten." Rather, we engaged with the text from where we were able to do so, engaging it with the honest questions that we could and did bring to the text, questions that were being raised for us in the course of our various graduate studies, questions that affected not just some aspect of our intellectual approach or perspective, but our own self-understanding. Of course, that did not mean "anything goes" with regard to our reading of Wittgenstein or any other text, as the readings of the text that members presented were regularly questioned and scrutinized. But it was in the context of an atmosphere of trust and respect that members of the colloquy brought their honest and over time —deepest—questions and reflections to the group, because it was an atmosphere that supported and encouraged that.

Third, while the colloquy was always philosophical and typically with a jovial spirit, it at times could and would be of deep personal import for the participants. One week someone might present on the nuances of the private language argument or on the issue of sensation in Wittgenstein, but another meeting someone would present on philosophical dimensions of a problem in their work or their religious practice or even their everyday practices and relationships. Some colloquy members stuck closer to the questions raised by the text. Others were more likely to begin by a discussion of a contemporary news event or an aspect of our everyday lives, and how the reading suggested insight into as aspect of our lives. For example, I myself underwent a discernment process that led me to become Roman Catholic, and I brought some of my thinking through of that to the group in the fall of 1991 and the spring of 1992. It was a testament and testimony to the group that the colloquy never separated philosophical reflection from the hurly-burly of ordinary life.

Even while I was still a graduate student, I was coming to see the profound import of Poteat on my thinking and my life. I had gone to Duke to study Christian ethics with Stanley Hauerwas, and Hauerwas' work was deeply formative in my way of thinking about theological ethics. But as I noted to myself then and would still claim, that while Hauerwas might have taught me more than anyone else "what" to think, it was Poteat who taught me more than anyone else "how" to think.

So what was it for Poteat to teach me how to think? It was never explicit, but it was his wisdom-in-action in the colloquy that rubbed off on me over time. A significant part of his influence on me was in teaching me how to ask questions, to be more aware of how little I understood things and thus to increase my intellectual curiosity, and also to better recognize and name poor or non-sensical questions. Poteat had a wonderful Socratic presence in the colloquy, not dominating or even initiating most of the conversation. His questions, while inevitably exposing facile or woolly-headed aspects of what we were saying or writing, were never directed to us to expose our error or foolishness, but to have us probe deeper into our own questions. He probed our comments and asked us questions that carefully and sharply pointed at what needed to be examined further and deeper.

In saying what I have said, I am aware of how inarticulate I am. I am profoundly aware that I absorbed the lessons Poteat gave me and they changed me; but much of what at the time was so challenging and revolutionary is now so obvious to me, and so it is not easy for me to recognize, much less articulate, the extent of Poteat's influence on me.

Thank you Poteat.

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 is 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 an electronic copy as an e-mail attachment.

Wisdom as Seen Through Scientific Lenses: A Selective

Survey of Research in Psychology and the Neurosciences

Paul Lewis

ABSTRACT Key Words: Paul Baltes, Scott Brown, Elkhonen Goldberg, Joseph LeDoux, Positive Psychology, Michael Polanyi, Jeffrey Schwartz and Sharon Begley, Ursula Staudinger, Robert Sternberg, wisdom.
This essay summarizes representative work in treatments of wisdom in Psychology and the neurosciences. It concludes with suggestions for how this work might cohere with and be enriched by engaging the work of Michael Polanyi.

Introduction

Interest in a more systematic and extended investigation of the virtues is a topic that has surged in theological and philosophical circles over the past three decades, but has not made much of a splash in the sciences, except arguably for the relatively new area of positive psychology.[1] This school of psychology traces its origins to a 1998 address to the American Psychological Association by Martin Seligman. Much like the humanistic psychologists of the 1960s and 70s, positive psychology intends to focus on human flourishing rather than the pathology that has occupied psychology through most of its history.   Unlike the older humanistic psychology, positive psychology endeavors to analyze empirically the strengths and traits of persons and institutions that seem to foster richer, more meaningful lives.[2]

In this review essay, for the sake of brevity and illustrative purposes, rather than investigate the range of work done in positive psychology, I focus on the virtue of wisdom, the study of which has been stimulated in part by the work in positive psychology. My goal here is to summarize some recent representative work in scientific understandings of wisdom by first examining treatments of wisdom in psychology, followed by treatments of wisdom in the neurosciences. I conclude with some suggestions for how this work might cohere with and be enriched by Michael Polanyi's insights.

Wisdom Among the Psychologists

Many psychologists have been studying wisdom for over twenty years now and have published several collections of essays.[3] Perusal of the tables of contents of these volumes indicates that the investigation has been commendably wide in scope. Essays distinguish between philosophical and religious treatments of wisdom, explore historical and cross-cultural perspectives on wisdom, investigate connections between wisdom and personality traits such as intelligence, self-identity, and creativity, as well as present experimental research on many topics such as the relationship between age and wisdom.

In this literature, psychologists often distinguish between implicit and explicit theories of wisdom. Some psychologists seek to derive descriptions of wisdom and/or wise persons by examining ideas about wisdom that are imbedded in folk wisdom, common sense, and cultural-historical or philosophical treatments of wisdom. Other

psychologists develop explicit theories of wisdom by articulating models of this virtue that can then be empirically investigated.[4] Of the varied explicit theories of wisdom that have been proposed, three overlapping models have emerged as dominant theoretical accounts.

The first, the Berlin Model, is associated with Paul Baltes and Ursula Staudinger at the Max Planck Institute for Human Development in Berlin. This model defines wisdom as expertise in "the fundamental pragmatics of life," by which the authors mean matters related to the conduct of life and the construction of meaning for life in various contexts, whether education, family, work, friendship, or the common good. Developing this expertise requires engaging an open and ill-defined body of knowledge, wrestling with the differences in values held by different people, and managing uncertainty. As with expertise in any area of life, two different types of basic knowledge are required: factual and procedural. Factual knowledge, for Baltes and Staudlinger, refers to knowledge about topics such as human nature and development, social norms, etc. Procedural knowledge involves knowledge of how to accomplish a task, such as weighing life goals, or planning. [5]

Wisdom, according to this model, develops over time in an intense, motivated process of learning guided by tutors as one masters critical life experiences that can be cognitive, motivational, social, interpersonal, and/or spiritual in nature. The fact that wisdom develops over time is corroborated by a study that concludes that wisdom-related knowledge and judgment develop to adult levels during late-adolescence and early adulthood (early 20's).[6] This does not mean, however, that age necessarily leads to wisdom. As the old adage says, old age sometimes just leads to old age.[7]

The second (Yale) model of wisdom is associated with Robert J. Sternberg, who describes wisdom as skill in applying tacit knowledge to the task of achieving the common good.[8] This task requires achieving a complex balance at two levels, the human and the environmental. At the human level, wisdom requires balancing intrapersonal, interpersonal, and extrapersonal interests. At the environmental level, those human interests have to be directed to a course of action that best balances the options of adapting to existing environments, modifying those environments, or moving to new environments.

Sternberg identifies six components of wisdom so understood: knowledge (understanding of presuppositions, meaning, and limits), discernment, a judicial thinking style that probes beneath surface appearances to discover how and why things happen as they do, tolerance of ambiguity, motivation to understand, and appreciation for the limits and possibilities of action in a specific context. Of these components, Sternberg stresses the importance of tacit knowledge, i.e., knowledge that is procedural, in that it represents "knowing how" more than "knowing that." Moreover, this knowledge is acquired without the direct help of others and is thus more "caught than taught."

The third model of wisdom is that of Scott Brown, who discusses six interdependent dimensions of wisdom and the conditions necessary for growth in wisdom. The six dimensions are: self-knowledge, an understanding of others, judgment (here understood as acute perception and discernment), life knowledge, life skills, and a willingness to learn. The conditions that foster or impede the development of wisdom are one's willingness to learn, the range and depth of one's experiences with others, and one's general environment.[9]

While there are some clear differences between these models in terminology and emphasis, it is worth noting that they are not mutually exclusive. In one way or another, they all realize that wisdom is developed over time, that it requires motivation, entails perceptivity, draws from both factual and procedural knowledge, and

requires a willingness to live with ambiguity. I therefore take it that they reflect an emerging consensus in the psychological literature.

Wisdom Among the Neuroscientists

Insights into the neurobiology of wisdom typically come from three sources, taken alone or in combination. The first is biology in general, which informs us of the process of brain development. A second source is that of brain scans (typically using fMRI technology) that show which parts of the brain are active while people engage in various tasks. The third source is work with people who have some kind of brain injury. Insights can be summarized succinctly under three points: what we are learning about brain development, what we are learning about specialization in the brain, and what we are learning about brain plasticity.

Brain development proceeds in three stages, the first of which consists of the formation of neurons, axons, dendrites, and synapses and extends from birth to roughly age 30.[10] Myelin also begins to coat the axons, thereby facilitating the transmission of electrical signals across the brain; this process continues until about age 30. Also at this time, enduring connections are made between different parts of the brain. The second stage, that of maturity, begins when myelination is completed and is marked by a stability of brain structures that soon thereafter beings begins to erode, a process that marks the beginning of the third stage, decline. In general, the brain decreases in weight and size by about 2% for every decade of adult life, connections between neurons become increasingly sparse, and blood flow and oxygen supply to the brain decreases.

However, the pace of development and decline is not uniform, as different parts of the brain mature and decline at different rates. For example, while neurons begin to form at gestation, new evidence suggests that the process continues throughout one's lifetime. Beginning at gestation, neurons also develop axons and dendrites, a process that is completed during the first few years of life. However, the length of time it takes the synapses to form varies from one part of the brain to another. For example, synapses in the visual cortex finish forming in a few years, whereas synapses in the frontal cortex do not finish developing until as late as age 30, the time that myelination concludes.[11] Brain decline also takes place at a differential rate, too. In general, the last area to develop, the frontal cortex, is the first to feel the effects of aging, while the older parts of the brain feel the effects of these changes last—although this pattern is often offset by habitual use—as we will see below.

A second insight into wisdom from the neurosciences comes from investigation into the areas of the brain that are used for various tasks. Remember that connections between disparate parts of the brain are formed in the run up to maturity. Research with brain imagining and animal studies suggest that the so-called executive functions of the brain (planning, foresight, impulse control, empathy, etc.) are not located in any single spot of the frontal cortex, but are instead spread throughout the cortex. Moreover, since the frontal cortex acts as a "conductor," it has deep connections both to centers for long-term memory (the hippocampus) and the motor cortex.[12]

These interconnections are important to understanding wisdom, according to Goldberg, who construes wisdom as a form of problem-solving that becomes increasingly dependent on pattern recognition.[13] As one becomes adept at pattern recognition, brain activity shifts predominantly to the neo-cortical regions of the brain and becomes increasingly left-brain. Moreover, wisdom seems to depend on generic memories, which involve frequently-used knowledge and are stored in the neo-cortex. Because of their physiological location, they are less reliant on brain structures associated with other types of memory, such as the hippocampus and brain stem.

This localization makes generic memory less susceptible to many kinds of brain injury. Other ways generic memory is safeguarded from more general patterns of brain decline are what Goldberg calls pattern expansion and effortlessness experts. In the former phenomenon, repeated use means that brain areas allocated to some skill expand or colonize other parts of the cortex. In the latter, repeated use means that the brain uses fewer resources, such as blood supply, to solve problems, thus making generic memory more resistant to the declines that should come with aging.

A final insight into wisdom from the neurosciences has to do with the plasticity of the brain, i.e., the fact that the development of brain structures is heavily influenced by experience. At birth, the brain of a child contains an estimated 100 billion nerve cells. As the child develops, excess neurons, dendrites, and synapses are pruned—not randomly, however, but on the basis of use. The phenomenon is much like the way that driving in the same path on a dirt road creates ruts which guide the car on later trips down that road. Thus many neuroscientists quip, "the cells that fire together wire together," or as one scholar puts it, this phenomenon of brain mapping amounts to a narrative of lived experience.[14]

That "experience," understood as response to external stimuli, plays a part in shaping or sculpting the enduring structures of the brain has been confirmed by numerous studies. For example, studies of speech perception indicate that by 12 months, children can hear only the speech sounds of their own language, whereas before they perceived the nuances of other languages, even if it was not their own. Moreover, experiments with kittens in which one eye has been sown shut at birth show that the neurons associated with that eye wither from disuse so that the eye remains blind, even after it is later opened. The flip side is also true, too, in that continued use makes connections stronger—perhaps even permanent parts of brain structure. In one of the more interesting studies, researchers found that the hippocampus (a part of the brain involved in directional memory) is bigger in more experienced and knowledgeable cab drivers than in rookies.

The duration of experience also seems important. In the case of the taxi drivers, it takes an average of two years to develop expertise in navigating London. More generally, studies of expertise suggest that it takes upwards of ten years to become an expert in fields as diverse as chess, mathematics, painting, or music composition. In the case of classical pianists, the amount of practice over a ten-year period is the best predictor of performance levels and even seems to counteract the declines that one might expect from aging.[15]

That experience, understood as internal effort can also shape brain structures has only more recently been acknowledged. For example, work with patients suffering from obsessive-compulsive disorder and Tourette's syndrome suggests that mental rehearsal is as effective as physical action in remapping brain circuitry—a finding that raises some intriguing questions about brain/mind relationships and the direction of causation.[16]

In sum, the neurosciences have told us something of the process and development of portions of the brain that are associated with wisdom. In particular, one is struck by the duration of brain development and the relationship between experience and physiology. These observations have both practical and philosophical implications. What is the import of these findings for teaching? What insights do they shed on the old mind-body problem? This work plows fertile ground for many areas of scholarship.

Conclusion

I conclude then with some impressions of this literature, admittedly unsubstantiated in this brief document, along with some observations about how this work might fit with Polanyi. One impression, again, is that the psychological literature commendably seeks to be inclusive in perspective. It tries to examine historical, cultural, philosophical, and religious perspectives on wisdom. Perhaps these treatments are not as sophisticated as one would like and could benefit from the inclusion of actual historians, cultural anthropologists, philosophers, and theologians in the conversation, but the discipline is indeed trying to combine some degree of philosophical reflection with empirical investigation. A second impression is that, for the most part, the literature on neurobiology is strikingly nonreductive in that it does not seek to explain away wisdom as nothing but electro-chemical activity in the brain.[17]

While Polanyi rarely gets any attention in this literature (apart from an occasional citation related to the concept of tacit knowing), I cannot help but think that he would have approved of this kind of endeavor, at least in principle. Were he able to comment on this research, I wonder what he might have said. I suspect that he would want to push the psychologists more on the notion of wisdom as pattern recognition. I suspect that he would push the neuroscientists on the matter of top-down and bottom-up causation by pointing them to his discussions of boundary conditions and levels of reality. Finally, I suspect he would remind all involved of the virtues necessary to sustain the scientific community. In short, it seems there is ample room for a fruitful, Polanyian contribution in this shared endeavor of striving to make sense of the alluring and elusive reality of the virtues.

Endnotes

[1]The University of Chicago has also just begun its Science of the Virtues project, which is part of its Arete Initiative. For more information, see http://arete.uchicago.edu.

[2]For more information on positive psychology, see *http://www.apa.org/apags/profdev/pospsyc.html*. See also www.ppc.sas.upenn.edu/executivesummary.htm and http://www.ppc.sas.upenn.edu/faqs.htm . All accessed 19 August 2009. The "Bible" of Positive Psychology is Christopher Peterson and Martin P. Seligman's encyclopedic *Character Strengths and Virtues* (New York: Oxford University Press, 2004). For a trenchant critique of positive psychology and especially its treatment of wisdom, see Barry Schwartz and Kenneth E. Sharpe, "Practical Wisdom: Aristotle Meets Positive Psychology." *Journal of Happiness Studies* 7 (2006):377-395.

[3]See for example, Robert J. Sternberg, ed., *Wisdom: Its Nature, Origins, and Development* (New York: Cambridge University Press, 1990), Warren S. Brown, ed., *Understanding Wisdom: Sources, Science, and Society* (Radnor, PA: Templeton Foundation Press, 2000), and Robert J. Sternberg and Jennifer Jordan, eds., *A Handbook of Wisdom: Pyschological Perspectives* (New York: Cambridge University Press, 2005).

[4]See Paul B. Baltes and Ursula M. Staudinger, "Wisdom: A Metaheuristic (Pragmatic) to Orchestrate Mind and Virtue Toward Excellence," *American Psychologist* 55 No. 1:123-124.

[5]This summary draws from Baltes and Staudinger, "Metaheuristic" 122-136.

[6]Monisha Pasupathi, Ursula Staudinger and Paul B. Baltes, "Seeds of Wisdom: Adolescents' Knowledge and Judgment About Difficult Life Problems. *Developmental Psychology* 37, 3 (2001):358.

[7]See Jennifer Jordan, "The Quest for Wisdom in Adulthood," pp. 167-176 in *Handbook* as well as M.J. Richardson and M. Pasupathi, "Young and Growing Wiser," pp. 152-154 in *Handbook*.

[8]My summary draws on Robert J. Sternberg, "A Balance Theory of Wisdom," in *Review of General Pyschology* 2:4 (1998):347-365.

[9]This summary draws from Jeffrey A. Greene and Scott C. Brown, "The Wisdom Development Scale: Further Validity Investigations." *The International Journal of Aging and Human Development* 68 (4) 2009:292-294.

[10]This summation draws from Elkhonen Goldberg, *The Wisdom Paradox: How Your Mind Can Grow Stronger as Your Brain Grows Older* (New York: Gotham Books, 2005), 37-49, Jeffrey Schwartz and Sharon Begley, *The Mind and the Brain: Neuroplasticity and the Power of Mental Force* (New York: HarperCollins, 2002), 96-131 and Joseph LeDoux, *The Synaptic Self: How Our Brains Become Who We Are* (New York: Penguin Books, 2002), 33-96.

[11]Although I have not summarized the research here, it is interesting to note that measures of cognitive maturity correlate with that of brain maturity: peak development of both reasoning skills and brain physiology occurs sometime after age 20. See James Rest, et al, *Moral Development: Advances in Research and Theory* (New York: Praeger, 1986), 176-179. See also his "Research on Moral Judgment in College Students," in *Approaches to Moral Development: New Research and Emerging Themes*, ed. by Andrew Garrod (New York: Teachers College Press, 1993), 201-227, Blythe Clinchy, "Beyond Subjectivism" in *Tradition and Discovery* XXXIV, No. 1 (2007-2008):27 and Patricia M. King and Karen Strohm Kitchener, *Developing Reflective Judgment* (San Francisco: Jossey-Bass, 1994), pp. 13-19, 149-150, and 219).

[12]See Goldberg, 163-164, 175-177, and 180-181, as well as LeDoux, 185-188 and 252-254. For a succinct list of brain regions and their relevant functions, see Darcia Narvaez and Jenny L. Vaydich, "Moral Development and Behavior Under the Spotlight of the Neurobiological Sciences." *Journal of Moral Education* 37, 3 (September 2008):293-294. A helpful literature review can be found in Thomas W. Meeks and Dilip V. Jeste, "Neurobiology of Wisdom: A Literature Review." *Archives of General Psychiatry* 66, 4 (April 2009):355-365.

[13]This account draws from Goldberg, 20-1, 107, 114, and 135-139.

[14]Leslie Paul Thiele, *The Heart of Judgment: Practical Wisdom, Neuroscience, and Narrative* (Cambridge: Cambridge University Press, 2006), 205.

[15] This account of expertise draws from the work of Goldberg, 19-20; Narvaez, "Neo Kohlbergian Tradition and Beyond: Schemas, Expertise, and Character," in Gustavo Carls and Carolyn Pope Edwards, eds., *Moral Motivation through the Lifespan* (Lincoln: University of Nebraska Press, 2005), 151; Thiele, 93; John L. Horn and Hiromi Masunga, "On the Emergence of Wisdom," in *Understanding Wisdom*, 262-267; Robert J. Sternberg, et al, *Practical Intelligence in Everyday Life* (Cambridge: Cambridge University Press, 2001), 105 and 210; and Malcolm Gladwell, *Blink: the Power of Thinking without Thinking* (New York: Back Bay Books, 2005), 176-186.

[16]Schwartz and Begley, 217, 236 and 250-2.

[17]This is expecially true of Schwartz and Begley, as well as Narvaez. Le Doux is a bit vexing, however.

Polanyi's Epistemology in the Light of Neuroscience

A Review Article

Walter Gulick

ABSTRACT Key Words: Michael Polanyi, Eric Kandel, tacit knowing, implicit memory, explicit memory, habituation, sensitization, anti-Semitism, reductionism, integration, brain plasticity, selective attention.
In Search of Memory, *Eric Kandel's excellent account of the rise of neuroscience, in which his own research has a prominent place, is reviewed with special attention given to its relation to Michael Polanyi's philosophy. It is found that Polanyi's epistemological theory, although established on quite different grounds, accords well with Kandel' s description of how the brain operates. In particular, Polanyi's theory of tacit knowing seems to be both enriched and validated by Kandel's account of how memory functions.*

How well does Polanyi's thought of half a century ago connect with the ongoing history of research in cognitive science, molecular biology, and understanding of the brain? Eric Kandel's book helps answer that question. It combines autobiography (of interest because he is a Nobel Prize winner in Physiology or Medicine) with a compelling historical account of step by step progress in understanding the brain and how it works. As a whole, his book is consistent with the general framework provided by Polanyi with respect to such issues as the tacit dimension, the epistemological centrality of integration, and emergence.

In American folk culture, when the writing of physicians is mentioned, illegible scrawl is more often the subject than graceful exposition. Kandel's work exemplifies the latter condition rather than the former suspicion. *In Search of Memory* intersperses fascinating vignettes of life history with concise, clear, and captivating accounts of key advances in neuroscience. Rare is the work that is both so well written and so informative about significant issues. In addition to outstanding prose, the book is blessed with many instructive diagrams and a helpful glossary.

Although Polanyi was born a long generation earlier than Kandel (whose date of birth is 1929), their biographical details show they share a good bit in common. They were each born into secular Jewish families in the Austro-Hungarian Empire or its remnants. Each was driven out of the German-speaking world by the incursion of the Nazis – Kandel's family escaped from Vienna just before World War II broke out. Each family emigrated to the Anglo-American world—Kandel's family to New York City. Each man earned a degree in medicine but turned professionally to other fields in scientific research. And both lived a culturally rich life in which issues of responsibility and morality came to explicit expression.

However, Kandel, unlike Polanyi, opted to reaffirm his Jewish identity by practicing its rituals in his family life. Kandel's reflections on Jewish identity bear on Polanyi's experience. Kandel, apparently relying on a distinction made by Frederick Schweitzer, distinguishes cultural anti-Semitism from racial anti-Semitism.

> Cultural anti-Semitism is based on the idea of "Jewishness" as a religious or cultural tradition that is acquired through learning, through distinctive traditions and education. . . It also holds that as long as Jewish identity is acquired through upbringing in a Jewish home, [its imputed unattractive] characteristics can be undone by education or religious conversion, in which case the Jew overcomes the Jew in himself or herself. A Jew who converts to Catholicism can, in principle, be as good as any other Catholic. (30-31)

Polanyi himself rejected provincial forms of Judaism as obscurantist and out of touch with the modern world. His rejection of rural folk Judaism and acceptance of a version of Christianity shows he understands religious identity to be a cultural option, but one with important consequences for thought and behavior. Racial anti-Semitism, on the other hand, is based on the view that Jews were the killers of Christ. Jews were seen as genetically deficient to a degree that no education or conversion could erase their imprinted deficiencies. Once Hitler entered Austria in 1938, racial anti-Semitism was imposed as official policy and the Kandels' only option if they were to survive was to escape Vienna. Similarly, Hitler's racial anti-Semitism was why Polanyi's earlier conversion to Christianity and service in World War I essentially no longer protected him, and, perceived as a racial Jew, he was best advised to leave Germany.

When one turns from life details to their approaches to science, different emphases between Polanyi and Kandel are evident. Polanyi delights in discoveries of coherence, and he regards experimentation as a tool for achieving or verifying such intellectual visions. For Kandel, however, the life of the lab is the heart of the scientific enterprise. His book elucidates, at its core, a series of illuminating experimental discoveries strung out in historical sequence like a strand of pearls. Thus Polanyi celebrates the intellectual processes whereby specific discoveries are made and provides a rather phenomenological and functional account of the mind's operations, while Kandel attends more closely to concrete, physiological details of how the brain works and provides a step by step survey of how our understanding of the brain was achieved.

Each man, however, appreciates the importance of the social context in which science is carried out, albeit again with different emphases. Kandel states that "what makes science so distinctive, particularly in an American laboratory, is not just the experiments themselves, but also the social context, the sense of equality between student and teacher, and the open, ongoing, and brutally frank exchange of ideas and criticism" (106; see also 417). Polanyi tends to stress the freedom of the mature individual scientist within the context of the authority of the scientific community (*SFS* 43ff). Indeed, the issue of freedom in science is central to each. Kandel writes, "Freedom to do research is like free speech, and we as a democratic society should, within rather broad limits, protect the freedom of scientists to carry out research wherever it takes them" (333). Polanyi would agree.

Where the scientific interests of Polanyi and Kandel most clearly overlap is in understanding the dynamics of tacit knowing. The way Polanyi situates tacit knowing in evolutionary development in Part Four of *Personal Knowledge* is affirmed in Kandel's experimental work. To understand the biological nature of the human mind, Kandel finds it profitable to begin by studying the minds of invertebrates. This is because signaling molecules found in the human brain have been conserved through millions of years of evolution; the same kind of signaling molecules are found operating in the neurons of simple animals that are found in humans (see xii-xiii). For, as the molecular geneticist Francois Jacob points out, "evolution is not an original designer that sets out to solve new problems with completely new sets of solutions. Evolution is a tinkerer. It uses the same set of genes time and again in slightly different ways" (235).

Kandel's exposition of "implicit memory" helpfully extends some of the things Polanyi, from a more intuitive perspective, said about the tacit dimension. Kandel provides details of historical cases that reveal how the brain incorporates information into knowledge and habits through different processes. Of greatest significance in this regard is the case of H.M. as studied by Brenda Milner. In 1953, H.M. sustained a serious head injury resulting in seizures and incapacitation. As a desperate measure to control his seizures, surgery was performed that removed the inner surface of his medial temporal lobe and hippocampus. His seizures were cured, but he suffered devastating loss of long-term memory. Kandel's account of what Milner discovered through observing H.M. is so helpful it is worth recounting in some detail. First, H.M.

> had perfectly good short-term memory, lasting for minutes. He could readily remember a multidigit number or a visual image for a short period after learning it, and he could carry on a normal conversation, provided it did not last too long or move among too many topics. This short-term memory function was later called working memory and shown to involve an area known as the prefrontal cortex, which had not been removed from H.M. Second, H.M. had perfectly good long-term memory for events that had occurred before his surgery. He could remember the English language, his IQ was good, and he recalled vividly many events from his childhood.
>
> What H.M. lacked, and lacked to the most profound degree, was the ability to convert new short-term memory into new long-term memory… He could retain new information as long as his attention was not diverted from it, but a minute or two after his attention was diverted to something else, he could not remember the previous subject or any thing he thought about it. (127-128)

Milner showed that memory is a distinct mental function quite different from other perceptual, motor, and cognitive processes. The surgery demonstrated that the medial temporal lobe and the hippocampus are processing and transforming sites rather than storage sites. It was further shown that the long-term storage areas for people, objects, places, facts, and events are the parts of the prefrontal cortex that were originally the sites where their short-term memory experience occurred. The hippocampus is needed to convert short-term to long-term memory.

While at first Milner thought H.M.'s ability to learn on a long-term basis was totally destroyed, further experimentation revealed he could learn tacitly new abilities that he could not explicitly express. "He learned to trace the outline of a star in a mirror and his skill at tracing improved from day to day, just as it would in a person without brain damage. Yet even though his performance improved at the beginning of each day's test, H.M. could never remember having performed the task on an earlier day" (131). This and other experiments revealed a difference between explicit memory, whether short-term (which H.M retained) or long-term (which H.M. lost), and the implicit memory (which H.M. retained in both short- and long-term versions).

> What we usually think of as conscious memory we now call, following Squire and Schacter, explicit (or declarative) memory. It is the conscious recall of people, places, objects, facts, and events – the memory that H.M. lacked. Unconscious memory we now call implicit (or procedural) memory. It underlies habituation, sensitization, and classical conditioning, as well as perceptual and motor skills such as riding a bicycle or serving a tennis ball. This is the memory H.M. retained.
>
> Implicit memory is not a single memory system but a collection of processes involving

several different brain systems that lie deep within the cerebral cortex. For example, the association of feelings (such as fear or happiness) with events involves a structure called the amygdala. The formation of new motor (and perhaps cognitive) habits requires the striatum, while learning new motor skills or coordinated activities depends on the cerebellum. . .

   Implicit memory often has an automatic quality. It is recalled directly through performance, without any conscious effort or even awareness that we are drawing on memory. . . For example, once you learn to ride a bicycle, you simply do it. (132)

Clearly, implicit memory as described by Kandel has close affinities to what Polanyi calls tacit knowing. Kandel reviews the earlier interpretations of such unconscious processes that were offered by Helmholtz, James, Ryle, and Freud and finds useful elements in each. When he focuses on learning theory, he reaches back to the association theory of Aristotle, its elaboration by Locke, and then its formulation by Pavlov and Thorndike as stimulus-response theory.

In the course of studying classical conditioning, Pavlov discovered two nonassociative forms of learning: habituation and sensitization. In habituation and sensitization an animal learns only about the features of a single stimulus; it does not learn to associate two stimuli with each other. In habituation the animal learns to ignore a stimulus because it is trivial, whereas in sensitization it learns to attend to a stimulus because it is important. (41)

It would appear that sensitization and habituation are basic psychological processes that underlie more complex types of learning. The primitive sort of selective process included in sensitization and habituation would seem to play a supportive role in each of the three types of tacit animal learning Polanyi discusses: trick, sign, and latent learning (see *PK* 71-77). Sensitization can be correlated with what Polanyi describes as the very deepest root of discovery and perception: an "animal's capacity to be intrigued by a situation, to pursue consistently the intimation of a hidden possibility for bringing it under control, and to discover in the pursuit of this aim an orderly context concealed behind its puzzling appearances" (*PK* 73). Kandel describes the function of habituation as follows: "The elimination of responses that fail to serve a useful purpose focuses an animal's behavior. . . Once they become habituated to such stimuli, they can focus on stimuli that are novel or associated with pleasure or danger. Habituation is therefore important in organizing perception" (168). For Polanyi, of course, the way we perceive is the model for the way we make scientific discoveries. He praises both the scientist's ability to ignore trivial stimuli (including apparent falsifying data) and the sensitivity to coherence as crucial for making contact with reality and establishing a true theory (see, for instance, *SFS* 24, 39, and 90). Habituation and sensitization are thus essential components of the scientific enterprise. This twofold ability when put to use by a scientist can be called "scientific passion;" it distinguishes "between demonstrable facts which are of scientific interest, and those which are not" (*PK* 135).

The selective function of sensitization and habituation allows for the discernment of learned associations which Kandel speaks of as classical conditioning and Polanyi speaks of as sign learning. Here is the primitive basis for the notion of causality. The spatial and temporal ordering of learned associations gives rise to the mental maps Polanyi calls latent learning.

While Kandel originally wanted to become a psychoanalyst, his experience in lab work came to convince him that real progress in understanding memory requires a reductive approach within biology. It requires learning how neurons work at the molecular level, one cell at a time. Here Kandel found himself opposed by many leading

neurobiologists. They are reluctant "to apply a strictly reductionist strategy to the study of behavior because they thought it would have no relevance for human behavior" (144). But Kandel, knowing that certain elementary forms of learning, like conditioning, habituation, and sensitization, are common to all animals including human beings, stuck to his reductionist instincts. He decided to study the comparatively giant neurons in the large marine snail *Aplysia* in order to determine how they were changed by learning.

Polanyi's thought is often appreciated because he takes such a firm stand against reductionism. It might then be thought that he would disapprove of Kandel's approach to learning theory. But there are different sorts of reductionism. One is the "nothing but" school that sees higher level phenomena as epiphenomena of what alone is real, the actions of the lower level of a comprehensive entity. Both Polanyi and Kandel would reject such a species of reductionism. Polanyi, however, would likely affirm the type of reductionism proposed by Kandel, as is evident especially in his evolutionary account of "the rise of man" in Part Four of *PK*. Human capabilities are built upon a series of increasingly complex animal capabilities. Explanation within Polanyi's hierarchical vision of reality would in fact require that the processes at each emergent level be understood. Kandel's reductive passion targeted the level of cell biology. But he makes it clear that he understands there are higher levels of functioning that his reductive analysis merely sets the stage for and does not determine. His comprehensive, level-sensitive vision (both he and Polanyi would likely affirm Ursula Goodenough's account of emergence as "something more from nothing but") is, for instance, indicated by his approach to mental disease. Rather than promoting simply a pharmaceutical regime for curing mental problems, which a "nothing but" biochemical reductionist would tend to do, he states, "many patients do better when some form of psychotherapy is combined with drugs, while a surprising number of patients do reasonably well with psychotherapy alone" (372).

In the nineteenth century, several important discoveries were made that indicated something about how the brain works at the level of language. Paul Broca examined a man who had suffered a stroke and "had lost the ability to speak fluently, although he indicated with facial expressions and actions that he understood the spoken language quite well" (122). In the postmortem examination of the man's brain, a lesion was discovered in what is now called Broca's area of the left cerebral hemisphere. Carl Wernicke discovered in 1879 another sort of speech defect in which people can utter words, but their order and meaning is incoherent. This disorder was found to be localized in another part of the left hemisphere. Wernicke theorized that both these two interconnected areas are each needed for the coherent expression and comprehension of language. The function of these two areas can be correlated to Polanyi's distinction between sense-giving and sense-reading (see *KB* Chapter 12). Broca's area processes sense-giving at the linguistic level; it evokes appropriate vocabulary and syntax in the construction of verbal meaning. Since a person with a damaged Broca's area can understand but not express language, sense-reading as a type of understanding occurs in another portion of the brain. That site appears to be Wernicke's area, which when damaged results in "a disruption in the comprehension of spoken or written language" (122). It is somewhat surprising to note that the ability to create meaning through language and the ability to recognize linguistic meaning are localized in different parts of the brain.

Kandel's work with *Aplysia* built upon earlier twentieth century discoveries about the functioning of neurons. Charles Sherrington, for instance, had discovered that animals possess innate reflex behaviors that are intrinsic to the spinal cord and do not require a message be sent to the brain—the equivalent of a tap on a human knee. He also found that some neurons are inhibitory while some are excitatory, and that individual neurons integrate these signals. "A motor neuron totals up all the excitatory and inhibitory signals it receives from the other neurons that converge upon it and then carries out an appropriate course of action based on that calculation" (71). Lord Adrian studied the electrical signals (the action potentials) propagated in neurons and

found that they are all very much the same. "The action potential is thus a constant, all-or-none signal: once the threshold for generating the signal is reached, it is almost always the same, never smaller or larger" (77). What makes some sensory impacts feel much more intense is that the signaling neuron fires much more rapidly, not that a single firing is much stronger. Unlike electrical current in a wire, which diminishes as it travels, the electrical signal sent along an axon of a nerve cell does not decrease in strength as it travels. Rather it proceeds in wave-like chemical fashion through the intrusion or extrusion of ions. Nerve signals are thus much slower but also much more reliable than electric signals in a wire.

All of these discoveries relate in instructive ways to Polanyi's thought. For one thing, the all-or-none firing of a neuron points to the non-linear quality of thinking. The summation of inhibitory and excitatory impulses in a neuron might total .93 when 1.0 is required for a firing, and these impulses would not then be acted upon. When 1.0 is a go and .17, .54, and .93 are not (and thus are functionally equivalent), this suggests that linear mathematical and logical modeling of the brain's functioning is inappropriate with regard at least to neural processing. Polanyi's informal understanding of logic as associated with achievement and his use of integrative intuition as an explanatory tool are thus more appropriate to epistemology than the use of strict formal logic and argumentation as typically practiced in the analytical tradition of philosophy. Kandel's claim that "the fundamental task of a nerve cell is integration" (93) comports well with Polanyi's emphasis upon the integration of subsidiaries as the essential act of knowing. Moreover, the joint action of many neurons resulting in an action or thought is consistent with Polanyi's notion of a spontaneously achieved order.

Kandel's work on *Aplysia* reveals another connection to a basic Polanyian contention. Kandel studied the neural basis of habituation, which we have seen enables an animal to ignore unimportant data. It also accounts for the boredom that arises from repeated stimuli and the decrease in sexual activity with the same partner over time. He found that when he repeated an electrical stimulus to the same bundle of neurons leading to a marker cell, "the synaptic potential produced by the cell in response to the stimulus decreased progressively with repetition" (168). The change in responsiveness has to do with chemical changes produced across the synapse between cells, not with the charge within a cell. The experiments demonstrate one aspect of the plasticity of the brain—how "the flow of information in the various neural circuits of the brain could be modified by learning" (171). Habituation's function of ignoring harmless, well known signals in order to be alert to signals of greater interest shows it to be an example of that general alertness of animals that Polanyi calls "an urge to achieve intellectual control over the situations confronting it. Here at last, in the logical structure of such exploring— and of visual perception—we found prefigured that combination of the active shaping of knowledge with its acceptance as a token of reality, which we recognize as a distinctive feature of all personal knowing" (*PK* 132).

After studying *Aplysia* for years, Kandel determined that the neural architecture of each member of the species was exactly like the architecture of other individuals. That raised the question of how a behavior controlled by invariant circuitry could be changed by experience. Further experiments demonstrated that "learning leads to a change in the strength of synaptic connections—and therefore in the effectiveness of communication— between specific cells in the neural circuit that mediates behavior" (200). Kandel links his discovery to the conflict in philosophy between empiricism and Kantian rationalism. "The anatomy of the neural circuit is a simple example of Kantian *a priori* knowledge, while changes in the strength of particular connections in the neural circuit reflect the influence of experience. Moreover, consistent with Locke's notion that practice makes perfect, the persistence of such changes underlies memory" (203). Put somewhat differently, the study of the brain shows that empiricism and rationalism have complementary merit.

Further study revealed that the mechanisms of short- and long-term memory are different. Short-term memory strengthens or weakens preexisting connections, but it does so for minutes, not just for the flash of time that a stimulus is sometimes experienced. This is because there is a difference between mediating neural circuitry, which directly affects behavior by releasing a spurt of the neurotransmitter glutamate, and modulatory circuits using interneurons that release serotonin to sustain short-term memory for a period of time by regulating the strength of synaptic connections. Long-term memory is still different; it requires such anatomical changes as the growing of new or retracting of old terminals that release neurotransmitters. The anatomical changes occur through the synthesis of new proteins which act as ion channels, enzymes and receptors within neurons. These changes are initiated in the nucleus of a cell where genes reside and their regulatory activity is expressed or suppressed (241ff). At the level of genes, Polanyi's emphasis on the importance of integration is again demonstrated by this work Kandel carried out well after Polanyi's death. Kandel found

> Sherrington's discovery of the integrative action of the neuron carried to the level of the nucleus. I was amazed by the parallels: on the cellular level, excitatory and inhibitory synaptic signals converge on a nerve cell, while on the molecular level, one CREB regulatory protein facilitates gene expression and the other inhibits it. Together, the two CREB regulators integrate opposing actions. (264)

Thus it turns out that genes are not simply the masters of behavior, they are also the servants of the environment. In other words, our behavior is not simply determined by the genes we have, for many of our genes are designed to facilitate appropriate adaptation to the threats and opportunities offered by incoming receptor reports.

It can be seen that Kandel's work dramatically reveals the plasticity of the brain in its responsiveness to experience. A further element contributing to the dynamic character of the brain's amazing gelatinous machinery is that most proteins, the agents of transduction, decay within a matter of hours (272). Such dynamism reveals the fallacy of thinking of the brain as analogous to computer hardware, which is a maze of permanently fixed connections. Not only models of artificial intelligence, but many versions of supervenience are rendered otiose by the unsettled character of brain circuitry. Yet the protean nature of the circuitry has elements of stability. Memories persist, habits endure. How does Kandel's understanding of the brain account for such regularities?

One element of stability has already been noted: that in general the brain's neurons are connected one to another in the same way in each individual of a species (although the connections that are turned on or off will vary quite widely among the individuals). A young colleague of Kandel's, Kausik Si, discovered another agent of stability: a protein located at the synapse of all neurons that has the crucial characteristic of a prion, namely that it is self-perpetuating. Prions are best known for their destructive dominance over other cells as exhibited in mad cow disease and Creutzfeldt-Jakob disease. But in a benign form, a self-perpetuating prion "could explain how long-term memory is maintained in synapses indefinitely, despite constant protein degradation and turnover" (273). In Polanyian terms, by replicating themselves, prion-like proteins would maintain their ongoing identity as specific subsidiaries supporting a particular long-term memory.

In 1989, at age 60, Kandel turned his attention to explicit memory. It was known that the hippocampus is implicated in such memory, and a 1971 discovery about how rats understand and negotiate space set the stage for Kandel's further research program. John O'Keefe found

> that neurons in the hippocampus of the rat register information not about a single sensory

modality—sight, sound, touch, or pain—but about the space surrounding the animal, a modality that depends on information from several senses. He went on to show that the hippocampus of rats contains a representation—a map—of external space and that the units of that map are the pyramidal cells of the hippocampus, which process information about place. (282)

Here at the level of molecular activity is confirmation of Polanyi's stress on the importance of latent learning (a spatial mapping of relationships) as a key attribute of inarticulate (tacit) intelligence and a prerequisite for problem-solving (see *PK* 73ff).

After his revolutionary work on *Aplysia*, which focused on cells and their connections, Kandel turned his attention to genetics as essential for understanding explicit memory. Mice, which can be bred to have differing personalities and which breed rapidly, became his primary research animal. Using a method of turning genes on and off, he could study short- and long-term spatial memory. Spatial memory is exceedingly important because it underlies many forms of explicit memory (for instance, memory of people and objects). From the perspective of neurobiology, spatiality is quite different than the necessary form of empirical intuition Kant postulated; it functions like an organizational directory relating not only empirical objects but ideas and events in memory. We have no specific organ dedicated to comprehending space. It is constructed through a complex series of integrations of different modalities.

It turns out that there is a significant difference between a spatial map generated through attention to surroundings (it has evenly distributed, allocentric coordinates, that is, ones that are centered on the world) and embodied sensory maps for touch and vision (they are egocentric, largely implicit, and especially observant of those parts of the body heavily endowed with nerves [fingers, the tongue, etc.]). The correlation is not exact, but this reminds one of the difference between Polanyi's self-centered integrations—poorly named because the focus is on the objects in the world, which makes them allocentric—and self-giving integrations which are of existential (egocentric) import (see *M* 71-75; Polanyian self-giving integrations have an important cognitive dimension lacking in Kandel's embodied sensory maps).

Kandel's investigations, especially on spatial maps, suggests that Polanyi's dichotomy between tacit and explicit knowledge leaves unarticulated some distinctions of epistemological importance. (1) Some tacit knowledge is autonomic: stimulus-response machinery built into our nervous system that need have no recourse to the mediation of the brain. The leg's action when one's knee is struck is an example of a reflexive response that is dubiously regarded as knowledge. However, the mind's innate ability to integrate inputs is a highly significant autonomic biological capacity that is not mediated by the brain but is built into its functioning as a brain. While we do not learn how to perform integration itself as a mental action, acts of integrating specific contents are necessary for learning to occur. Perhaps Polanyi would not call such instinctual processes examples of "tacit knowledge," as they are built into our biological machinery rather than learned, but they are tacit and they do contribute to higher level acts of knowing. (2) Some specific acts of tacit responsiveness are mediated by the brain but remain unconscious, taking place in the limbic system alone, for instance. Insofar as they are learned, they would seem to be examples of tacit knowing. Specific processes of sensitization, habituation, and classical conditioning are examples. (3) The three forms of tacit learning Polanyi identifies (trick, sign and latent learning) all require explicit attention when being learned, although when consolidated as skills, environmental understandings, etc. they may function in a purely implicit manner as a sort of second nature. "Learning to ride a bicycle initially involves conscious attention to one's body and the bicycle, but eventually riding becomes an

automatic, unconscious motor activity" (132). That is, when thoroughly indwelt through practice, type (3) may function like type (2). Note that non-human animals have both implicit and explicit memories; for Kandel the difference is based on whether selective attention and arousal is directed toward focal objects (necessary for explicit memories on both a short- and a long-term basis). In *PK*, Polanyi can be interpreted as making the distinction between the tacit and the explicit a matter of the difference between whether (4) language functions in consciousness or not (the articulate versus the inarticulate). This is tricky, because in the process of formulation there is a tacit (skillful) component to language use, whereas as expressed in speech or writing, language is explicit. In any case, making the distinction between the tacit and the explicit rest on whether or not language shapes consciousness will not do, since animals lacking language can have explicit but inarticulate knowledge. The key issue is whether or not selective attention is directed to incoming information provided by receptors. For as Kandel notes, "explicit memory requires selective attention for encoding and recall" (311). Language can function as a means of selective attention, but it is not the only means of simplifying experience and providing selective focus.

To summarize the immediately preceding discussion, in tacit knowing in its most comprehensive sense there can be found: (1) innate capacities or skills that often are necessary for higher levels of knowing even to be possible; (2) specific unconscious acts, expressions of what Kandel calls implicit memory, that expand skills and often contribute to such conscious processes as explicit learning, perceiving, and discovering; (3) relatively complex acts of learning that typically involve explicit as well as implicit attention, acts humans share with highly developed animals and which Polanyi singles out as trick, sign, and latent learning; and (4) normal human consciousness in which explicit focus is made possible by language which in turn allows for there to be reflection and rational choice.

Selective attention is a kind of filter that focuses an animal's awareness on matters of importance to the animal and ignores (perhaps based on ignorance, perhaps based on habituation) most incoming information. Some attention is involuntary and triggered by instinctively important aspects of external reality: loud noises, sudden movements, bright colors. Voluntary attention is related to conscious intention and purpose. Voluntary attention understood at the level of the brain is a modulatory process in which the neurotransmitter dopamine typically functions as an agent. Kandel compares the involuntary attention he recognized in *Aplysia* with the voluntary attention seen in a mouse:

> In implicit memory storage, the attentional signal is recruited involuntarily (reflexively), from the bottom up: the sensory neurons of the tail, activated by a shock, act directly on the cells that release serotonin. In spatial memory, dopamine appears to be recruited voluntarily, from the top down: the cerebral cortex activates the cells that release dopamine, and dopamine modulates activity in the hippocampus. (314)

At a more sophisticated cultural level, Polanyi gets at the significance of attention in several ways, including through his emphasis on focal meaning and via his pointing out the important role of existential interest in shaping such cognitive achievements as symbols, metaphor, and works of art.

The significance of attention is utilized by Kandel in another important way: in defining consciousness "as a state of perceptual awareness, or selective attention writ large" (376). "Consciousness," he goes on to say, "thus refers to our ability not simply to experience pleasure and pain but to attend to and reflect upon those experiences, and to do so in the context of our immediate lives and our life history." In mentioning reflection, he

seems to introduce the role of symbols as facilitators of human consciousness, but this particular comment seems to ignore the realm of animal awareness [(3) above] which is selective and thus richer than the experience of pleasure and pain yet not as rich as symbol-based human consciousness. He sees understanding consciousness in contrast to physical reality as the biggest challenge facing science and can offer little in the way of his own research to whittle away at the challenge. Consequently in his discussion he relies on the speculations of others, agreeing with Nagel and Searle that consciousness has two crucial characteristics that challenge our explanation: unity and subjectivity. The latter is the harder problem: we lack an adequate theory of how objective phenomena like electric signals in neurons can create subjective experience. Here perhaps Polanyi's from-to theory of consciousness, his notion of an active center, and his understanding of emergence can point the way to further progress in understanding consciousness.

Toward the end of *In Search of Memory,* Kandel shows how his original interest in psychoanalysis can be reconciled with his research in neuroscience. For neuroscience has increasingly been able to illuminate the functioning of emotion-driven behavior and mental disease, two concerns psychoanalysts have traditionally dealt with. One result of greater neurological understanding of emotions is that the seemingly paradoxical James-Lange theory has been partially vindicated. William James postulated that the cognitive experience of emotion is a secondary interpretation of prior physiological responses to dramatic environmental situations. The subsequent research of Antonio Damasio indicates that the experience of emotion indeed has two components: first, an unconscious, implicit evaluation of a stimulus that acts directly on behavior and thereby bypasses the brain, and second, the analysis by the cortex of the brain of the nature of the stimulus in relation to previous, similar stimuli and in relation to one's physiological response, all summed up in a slightly delayed conscious emotional assessment (340-344). Attending to the emotional response of fear, Kandel is able to demonstrate that there are neurobiological ways of associating fear-producing stimuli with positive feelings that culminate in learned positive feelings in place of fear. Neuroscience increasingly has therapeutic implications.

Eric Kandel, in reflecting upon his life and career, expresses a deep and abiding satisfaction. He rejoices in his participation in a communal effort that has "brought biology, once a descriptive science, to a level of rigor, mechanistic understanding, and scientific excitement comparable to that of physics and chemistry" (418). And those of us who have taken a deep interest in Michael Polanyi's thought can also feel satisfaction in the way that neuroscience, taken as a whole, confirms the Polanyian vision of epistemology and ontology worked out on quite different grounds. Or to put the point another way, it is a testament to the power of Polanyi's intuitive vision, attentive to the psychology of his time, that it correlates so well with the findings of contemporary neuroscience. To be sure, the explanations of neuroscience cover only one level of the multileveled universe in which we dwell. Still, the reassuring convergence between Polanyi's philosophy and Kandel's neurobiology ought to serve as a stimulus for further ventures that take seriously Polanyi 's relevance to issues of our day.

REVIEWS

Simen Andersen Øyen and Rasmus T. Slaattelid, eds., *Multiple Democracies in Theory and History.* University of Bergen: SVT Press, 2009. Pp. viii + 114. ISBN: 978-82-7907-006-1. 20 Euros.

Is it reasonable to speak of many different forms of democracy, or is it more accurate simply to speak of various forms of political organization? That is, does it make sense to think about how cultural and historical influences would shape democratic impulses into different but still related expressions? Or is there an irreducible and definable essence to the notion of democracy that was first glimpsed in ancient Greece and then flowered in Western civilization? These are the sorts of questions raised by these intriguing essays that were first presented during the "Multiple Democracies" conference sponsored by the University of Bergen and East China Normal University in 2008.

The inspiration for the notion of multiple democracies is the discussion generated by Shmuel Eisenstadt's notion of multiple modernities. Eisenstadt's notion stands in contrast to Samuel Huntington's theory of a clash of civilizations in which Western democracies, rooted in Christian values and energized by a free trade market economy, are opposed by Muslim and other world cultures, an opposition in which common ground is hard to find. In other words, Eisenstadt challenges Huntington's notion of virtually incommensurable civilizations poised for conflict. Similarly, the idea of multiple democracies can be seen as challenging the view that the Western idea of democracy is the ideal model in terms of which all other political developments are to be judged. Simen Øyen writes that in the discussion of multiple democracies, "alternative sufficient conditions for what constitutes a democracy are replacing the necessary criteria of traditional approaches" (p. 27)

Eisenstadt contributes the first article in the volume at hand, but his piece does not focus primarily on multiple democracies. Rather he examines the notion of civil society and addresses the question concerning whether it is appropriate to use the term *civil society* to refer to any non-Western social forms. At issue for Eisenstadt is whether civil society is best viewed as comprised of the multiple, often volunteer, largely self-regulating associations and organizations, separate from the state, "in which the ideal of civility, tolerance, non-violent relations, and a message of universal inclusiveness are promulgated" (8). Those are the ideal values in terms of which civil society is often portrayed. Yet for Eisenstadt the reality is often quite different: the various components of civil society are engaged in competing visions of social order. Similar sorts of regulatory adjustments are found within what at first glance seems to be the opposite of the autonomous components of civil society, namely, the Indian caste system. Thus, in quite different sorts of societies there are social forces functionally nearly equivalent to the Western idea of civil society, and when all such forces are strong, and when the state has a strong yet responsive center, society as a whole is healthy and can thrive.

Tong Shijun brings Charles Taylor, Jurgen Habermas, and the Chinese philosopher Feng Qi into the conversation in his brief but illuminating article. Taylor thinks that while a culture's various religious and metaphysical views may be incompatible, nevertheless, if one focuses on *norms of conduct*, general agreement is possible. Furthermore, these norms strongly impact behavior only if they are deeply embedded in a culture that recognizes the worth of all humans and is willing to subject its own cultural inclinations to the same kind of scrutiny that it directs toward other cultures. Tong appeals to Habermas to support his claim that *responsible* autonomy is a key aspect of any productive notion of democracy. He then applies his reflections to the disposition Chinese people typically bring to considerations of democracy within

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Chinese politics. His next to last paragraph is worth quoting in some detail:

> On the whole, according to Feng Qi, in the West priority was traditionally given to the principle of free will instead of the principle of reasonable thinking with regard to community life and collective decision-making. That is why in the West the social contract theory has been the most important tradition of democratic thinking and the idea of autonomy or self-rule has been the essential core of the definition of democracy. In China, by contrast, priority was traditionally given to the principle of reasonable thinking instead of the principle of free will with regard to community life and collective decision-making. . . .[Chinese people] are still used to giving priority to the principle of reasonable thinking, deeply skeptical of the value of individual free wills that are not believed to be supported by expert knowledge. (21)

The principle of reasonable thinking, in Confucian thought, is to pay attention to and be obedient to the Heavenly Principles abiding in one's mind and exemplified by the sage or wise ruler. This means being obedient to the authority even when this means denying natural desires. What is occurring in present-day China is a market-supported increase in promoting and satisfying individual desires at the expense of the traditional "thinking together" emphasized in Confucian China. What this might eventually mean for Chinese governance is an open question.

My commentary on these two articles will give one some idea of the richness of the reflections in this volume. But is there any relation to the thought of Polanyi? I will give one indirect and one direct illustration of such a connection.

First, as an example of an indirect allusion to a Polanyian notion, I would point to Gunnar Skirbekk's contribution to the volume. Skirbekk rejects what he calls "the liberalist attempt to secure private freedom as separate from the moral norms that are constitutive for serious discussions" (48) A democracy that empha-

sizes the individual's right to freedom from external interference will tend to encourage individuals to view the government as an unwelcome external force, a view now adopted by many Americans. Skirbekk argues that whether one dwells in a participatory or representative democracy, one is co-responsible for political decisions and their outcome. In this regard his view is comparable to Polanyi's emphasis on public liberty in contrast to private liberty. Public liberty involves persons acting freely on behalf of healthy social order both in ordinary ways - e. g., being informed and voting - and in structural ways - putting in place and supporting regulations that allow spontaneous orders to contribute to the common good.

Second, the only article in which Polanyi is explicitly discussed is Yu Zhenhua's "Towards a Thick Notion of Democracy via a Critical Examination of Michael Oakeshott." To greatly simplify Yu's rich argument, he attacks Oakeshott's view, seemingly based on Aristotle, that morality is best practiced in an unreflective way by following habits embedded in traditions. Oakeshott seems to think that when persons attempt to be moral by following moral rules or ideals, they substitute for the strength of habit the weakness of (rationally determined) will. Yu makes reference to Peter Winch and David Schön in showing that reflection is involved in applying habits, that Oakeshott's notion of reflection is curiously incomplete, and that his ethics is in some ways at odds with his political theory. Yu notes that Oakeshott's political theory includes a fruitful notion that is undermined by the inadequate dichotomy between habit and reflection that mars his ethical theory. Oakeshott fruitfully claims that political arrangements "compose a pattern and at the same time they intimate a sympathy for what does not fully appear" (quoted from Oakeshott's *Rationalism in Politics and Other Essays* [Liberty Press, 1991], 56-57). What does not fully appear is immanent in a tradition of political behavior. Yu says,

> In tackling various political problems, even political crises, people intelligently make use of the resources of their tradition. I suggest we call democracy in this sense "democracy as competence". By "democracy as competence", I mean a kind of political practical knowledge, whereby

people know how to go about their political activities in a democratic way in concrete, contingent situations when there is no abstract principle or general theory available to them. (74)

Democracy as competence may become routinized and result in democracy as habit, and it may be verbalized and related to political principles and ideals, issuing in what Yu calls democracy as an ideology. Yu's grounding notion of democracy as competence is an expression of Polanyian tacit knowing construed as intelligent behavior that need not rely on explicit political ideals and principles. Tacit knowing fills the gap Oakeshott leaves between unreflective or purely self-interested political habit and ideological or even deductive forms of highly rational political behavior. That is, Polanyian tacit knowing is an intelligent but not rationalistic manner of proceeding that better fulfills Oakeshott's proper emphasis on politics as pursuing intimations of existing traditions of behavior than Oakeshott's tendency to think in terms of dichotomies otherwise allows.

The last three articles in this collection deal with discussions of democracy within the Chinese context. Lin Zhang notes that the term "democracy" was Mao Zedong's most powerful weapon of publicity in opposing both the Japanese and Chiang Kai-Shik (95). But it was a conditional kind of democracy that faded once Communist supremacy in China was established. But, as Pan Derong argues, Mao's temporary emphasis on democracy is not new in Chinese history; forms of democracy can be traced back to Confucius and Mencius. Pan sees a major difference between Western and Chinese ideas of democracy to be the difference between a legalistic and a moralistic foundation respectively. And Zhao Xiuyi shows that the discussion of what form of democracy is best for China now is a hot and unresolved question. In sum, all these essays give witness to the fact that there are indeed multiple ideas of democracy.

Walter Gulick
WGulick@msubillings.edu

Andy Clark, *Supersizing the Mind: Embodiment, Action, and Cognitive Extension*. Oxford and New York: Oxford University Press, 2008. Pp. xxix + 286. ISBN 978-0-19-533321-3. $35.00. Cloth.

In *Supersizing the Mind*, Andy Clark offers a spirited defense of an idea that he and David Chalmers first set out in their 1998 essay, "The Extended Mind" (reprinted as an appendix to the book). In this work, Clark continues to argue that mind should be construed as something more than the biological brain (and associated nervous system). For Clark, the notion of mind should include the "…inextricable tangles of feedback, feed-forward, and feed-around loops… that promiscuously criss-cross the boundaries of brain, body, and world" (xxviii). Put differently, Clark argues that "human minds and bodies are essentially open to episodes of deep and transformative restructuring in which new equipment (both physical and 'mental') can become quite literally incorporated into the thinking and acting systems that we identify as our minds and bodies" (30-31). Mind therefore is a phenomenon that emerges where brain, body, and the world (both social and material) connect (219). The case of Otto serves as a paradigm for Clark. Otto suffers from Alzheimer's disease but manages to negotiate the world successfully by using a notebook that serves as his memory (xi and 226 ff). Clark wonders why the notebook should not be understood as part of Otto's mind, since it certainly aids his cognitive (and practical) functions.

Clark devotes the first part of the book (Chs. 1-4) to evidence for construing the mind as extended; a summary of the entire range can be found on pp. 81-2. One interesting line that Clark draws from is the principle of "ecological control." It seems that engineers, in their efforts to design and build robots, have learned that achieving programming goals does not require "…micromanaging every detail of the desired action or response but by making the most of robust, reliable sources of relevant order in the bodily or worldly environment…." (5-6). Another line of evidence by which we extend our minds into the world, according to Clark, is language (Ch. 3). Labeling, for example, provides a way of grouping or otherwise

making sense of the world, as well as making it possible to think about—and modify—our own thinking. Thus language serves "to anchor and discipline intrinsically fluid and context-sensitive modes of thought and reason" (53). Our use of space to simplify cognitive processes is another way we extend our mind beyond simply our biological brain (Ch. 4). One simple example is how a cook might arrange ingredients in the order they will be used rather than having to constantly refer back to a recipe. The picture of human cognition that emerges from Clark's analysis is that of fluid processes that are "soft assembled from a motley crew of neural, bodily, and external resources" (197).

In the second part of the book (Chs. 5-7), Clark defends his position first by responding to specific criticisms and then by enumerating what he sees as advantages to the view of extended mind. At root of these various criticisms seems to be the fear that viewing mind as something embodied not only in brain, but in various external props and tools, minimizes the brain's role in cognition. To this concern, Clark quite explicitly argues that the biological brain remains "in the driver's seat…but once such an organization is in place, it is the flow and transformation of information in (what is often) an extended , distributed system that provide the machinery of ongoing thought and reason" (122; see also 165). What we gain from an extended view of mind is thereby "…the essential lens through which to appreciate the startling power and elegance of the neural machinery, observed at home in its proper ecological setting" (141).

Despite the value of the extended view, Clark does recognize that it has its limits, which he explores in the third part of the book (Chs. 8-10). He criticizes certain models of sensory-motor action for failing to acknowledge the "firewalls" and complexity of ways we interact with our world (Ch. 8). In addition, he addresses what he thinks are misunderstandings of embodiment that treat embodiment as a stricture on cognition (Ch. 9). Instead of seeing embodiment as a problem, Clark understands the physical body to be the "organ of active sensing, the means to information self-structuring, and the enabling structure supporting a variety of extended problem-solving organizations" (217).

For readers of this journal, the book can be read as an extended commentary on and extension of many of Michael Polanyi's ideas. While Polanyi's name never appears in the text, notes, bibliography, or index, there are certainly affinities between Clark's work and that of Polanyi; I shall highlight three that might bear further investigation. The first is that while Clark does not speak of indwelling or the from/to structure of knowing, these ideas are compatible with much of what he says. See, for example, Clark's discussion of how the body or a pen can become "transparent equipment" that we "see through" to accomplish the task at hand (10). A second affinity between Clark and Polanyi can be found in Clark's attention to part/whole relations, as well as his notions of ecological and soft control, which echo Polanyi's discussion of comprehensive wholes that reflect a multi-layered reality wherein control is hardly simple and mechanistic. Finally, Clark's discussion of what language allows us to accomplish is compatible with Polanyi's discussion of the powers of articulate thought.

Overall, Clark makes a largely compelling argument for the view he calls extended mind. He uses an impressive array of evidence, from everyday examples of people like Otto, to work in robotics, artificial intelligence, and neurology. He is also refreshingly civil in his rejoinders to critics (although I do wonder, at times, if he has not overly simplified their views). The book is at times disjointed and repetitive, which is not surprising since much was published previously in other settings. However, the biggest blind spot I find in the argument has to do with Clark's enthusiasm for how we constantly augment our cognitive powers. I am troubled by claims that our "boundaries and components are *forever* negotiable" and flexible (43, emphasis added). Are we, in fact, infinitely plastic creatures? Are there limits to our flexibility such that at some point we cease to be "humanly" embodied? Those are questions I wish Clark would address more explicitly and carefully.

Paul Lewis
lewis_pa@mercer.edu