

Tradition & Discovery

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Preface	2
News and Notes	3
Fall and Winter 2008 Polanyi Society Meetings	5
Notes on Contributors	7
“Respect and Empathy in the Social Science Writings of Michael Polanyi”	8
William Kelleher	
Information on Polanyi Society Electronic Discussion List	32
“Polanyi in the Face of Transhumanism”	33
R. P. Doede	
“Andrew Grosso on Polanyi as a Resource for Christian Theology”	46
John Apczynski	
“Re-Visiting <i>Personal Being</i> : A Response To Apczynski’s Review”	48
Andrew Grosso	
Reviews	50
Dennis Ford, <i>The Search for Meaning: A Short History</i>	
Walter Gulick	
Leslie Paul Thiele, <i>The Heart of Judgment: Practical Wisdom, Neuroscience, and Narrative</i>	
Paul Lewis	
Tony Clark, <i>Divine Revelation and Human Practice: Responsive and Imaginative Participation</i>	
David Nikkel	

The Polanyi Society

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Preface

Bill Kelleher's essay "Respect and Empathy in the Social Science Writings of Michael Polanyi" is an interesting reading of Polanyi's thought in terms of what might be termed a biologically-grounded ethic. R. P. Doede's "Polanyi in the Face of Transhumanism" applies Polanyi's ideas to the emerging body of thought termed "transhumanism," which appears to be a new dress for Enlightenment utopianism. Both essays were originally papers delivered at the June 2008 Loyola University conference at which about forty participants celebrated the fiftieth anniversary of the publication of *Personal Knowledge*. There is also in this issue an exchange between John Apczynski and Andrew Grosso focused around Grosso's recent book *Personal Being* which explores uses of Polanyi as a resource for Christian theology. There are reviews by Walter Gulick, Paul Lewis and David Nikkel. The Nikkel's review treats Tony Clark's *Divine Revelation and Human Response*. This is one of the two books to be discussed at sessions of the Polanyi Society annual meeting on October 31 and November 1, 2008 in Chicago (see page 5 for meeting details). The other session focuses on Phil Rolnick's *Person, Grace, and God*. You will also find (pages 6 and 7) the schedule and paper abstracts for another Polanyi Society meeting to be held in Philadelphia on December 28, 2008 in conjunction with the Eastern Division meeting of the American Philosophical Association. Robert Innis, Walter Gulick, Vincent Colapietro, Ron Hall, Michael Raposa, Charles Lowney and Drew Leder are the principals in the session. The Loyola conference and the meetings in conjunction with the AAR and APA make 2008 a banner year for the Polanyi Society. Please notice the inserted page requesting dues and contributions to the Society. This is especially important since a few unexpected expenses for the Loyola conference forced the Society to dip deeply into our operating funds. Notice also the several items in "News and Notes." There is now available a special Polanyi issue of *The Political Science Reviewer*. Much of the material on which *Meaning* was based has recently been published in *Polanyiana*. At the upcoming Chicago annual meeting, the Board of Directors is putting forth a By-Law change that should make addressing the business affairs of the Society more efficient.

Phil Mullins

Tradition and Discovery is indexed selectively in *The Philosopher's Index* and *Religious and Theological Abstracts* and is included in the EBSCO online database of academic and research journals.

NEWS AND NOTES

Yu Zhenhua's essay "Embodiment in Polanyi's Theory of Tacit Knowing" was recently published in *Philosophy Today*, Vol.52, No.2 (Summer 2008): 126-135).

Polanyi Symposium in the 2008 Issue of *The Political Science Reviewer*

The current annual - 2008 - issue of *The Political Science Reviewer*, devotes some 240 pages to a symposium on the insights of Michael Polanyi. Six Polanyian scholars - Dale Cannon, Tony Clark, Walter Gulick, Paul Lewis, Mark Mitchell, and Diane Yeager - have authored essays for this major journalistic symposium, describing Polanyi's numerous contributions to epistemology, theology, and political economy. Phil Mullins provides a comprehensive and in-depth review and assessment of six major secondary sources on Polanyi as a useful guide to those approaching Polanyi for the first time. Walter Mead writes an introduction to this collection.

For those who do not subscribe to this journal, individual copies of this 312 page issue (Vol. 37) can be obtained for \$10 plus \$2 postage (slightly more for mailing outside the U.S.) by phoning (800)526-7022, or faxing (302)652-1760, or postal mailing their request to The Managing Editor, *The Political Science Reviewer*, 3901 Centerville Road, P.O. Box 4431, Wilmington, DE 19807.

Poteat Archive

Wally Mead is presently making inquiries to create an archive for letters and papers relating to the late William Poteat, former Duke professor and mentor of many in the Polanyi Society. If you have any letters, papers, and/or class notes from your relationship with Bill Poteat that would be of archival value, please inform Wally whether you are willing to contribute these, or copies of these, to the collection and, if so, approxi-

mately how many of these. (It is necessary to advise prospective archivist librarians of the amount of space the total collection would likely require.) Also, if you know of others Wally should contact for such materials, please inform him. Finally, if you are willing to assist in the collecting and organizing of these materials, please inform him at <[wbmead@ilstu.edu](mailto:wamead@ilstu.edu)>. Materials should be mailed to Walter Mead, 4 Kenyon Court, Bloomington, IL 61701.

Recent Issue of *Polanyiana*

Volume 15, Numbers 1 & 2 (2006) of *Polanyiana* is an English issue whose publication was not noted in *TAD* when it came out. The following four articles are in the issue: Struan Jacobs, "Polanyi's Pressagement of the Incommensurability Concept" (5-20); R. T. Allen, "The Cognitive Functions of Emotion" (21-40); Tihamér Margutay, "Indeterminacies By Polanyi" (41-55); and Peter Coleman, "A Note On Michael Polanyi and the Congress of Cultural Freedom" (56-64).

Additionally, this issue of *Polanyiana* includes "Meaning, Lost and Gained," which was the April and May 1969 six part seminar series given at the University of Chicago and later repeated at the University of Texas, Austin. The series concluded with several public lectures known under the title "Meaning, A Project." This material was combined with other Polanyi writing in the book *Meaning* by Harry Prosch and Polanyi.

Polanyi Society Travel Funds

For students and others requiring assistance to attend the Society's meetings held in conjunction with the AAR and the APA, Eastern Division, limited funding may be available. Please do apply although the travel fund resources were substantially reduced in providing grants for the June 13-15, 2008 "*Personal Knowledge At Fifty*" Conference at Loyola University,

Chicago. Society members are urged to inform worthy candidates that this assistance is available. Those interested in applying for this funding, as well as those able to assist in making this funding available, should contact Walter Mead (wbmead@comcast.net) and see the information on the Polanyi Society web site (<http://www.missouriwestern.edu/orgs/polanyi/>). Anyone interested in contributing to the travel fund should also contact Walter Mead.

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).

Polanyi Society By-Law Change

At the Saturday morning Business Meeting of the Polanyi Society in Chicago November 2 (see p. 5), proposed changes in the Society By-Laws will be voted upon. The major change is shifting the majority of official decision making from the Business Meeting held in conjunction with the AAR to Board meetings wherever they are held. The Business Meeting has been mainly attended by Board members, so the current arrangement is rather redundant and (because we often extend the discussion time for papers) has insufficient duration for the deliberation needed. Other changes are

relatively minor and include making the Editor of *Tradition and Discovery* an ex-officio member of the Board (rather than a voting Board member, at his request) and adjusting the definition of quorum. The proposed changes will be posted for review on the Polanyi Society website in early October. Any Polanyi Society member who has questions or comments about the proposed changes, should contact Board President Wally Mead (wbmead@comcast.net) or past President Walt Gulick (WGulick@msubillings.edu).

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.

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2008 Polanyi Society Meetings

Annual Meeting With Two Sessions at the American Academy of Religion

The Polanyi Society will hold its annual meeting in conjunction with the AAR, November 1-3, 2008 rather than in the week before Thanksgiving, the period for the meeting for many years. To attend the Polanyi Society annual meeting, it is not necessary to register for the AAR meeting. For additional information about the AAR meeting, go to http://www.aarweb.org/meetings/Annual_Meeting/Current_Meeting/Reg1.pdf. The hotels and rooms in which the annual meeting will be held are included below and will be posted on the Polanyi Society web site (<http://www.missouriwestern.edu/orgs/polanyi/>). Please check the AAR Program-At-A-Glance booklet available at the AAR Registration to assure that the rooms have not been changed. The response papers should be available for downloading from the Polanyi Society web site around October 20, 2008. As in past annual meetings, formal response papers will be summarized rather than read in order to conserve time for general discussion.

Friday, October 31, 9:00 p.m. to 11:00 p.m. Chicago Hilton Towers, PDR 3

A Symposium on Tony Clark's *Divine Revelation and Human Response* (Session M31-419)

Reviews: Chris Kettler, Friends University
Walter Mead, Illinois State University
Response: Tony Clark, Friends University
Open discussion

Saturday, November 1, 9:00 a.m. to 11:30 a.m. Palmer House, Harvard Room

A Symposium on Phil Rolnick's *Person, Grace, and God* (Session M1-115)

Reviews: Paul Lewis, Mercer University
Paul Gavriluk, University of St. Thomas
Response: Phil Rolnick, University of St. Thomas
Open Discussion

Business Meeting-Open to Polanyi Society members and others interested

American Philosophical Association

Abstracts of Polanyi Society Sessions

The Polanyi Society is sponsoring two sessions in conjunction with the meeting of the Eastern Division of the APA. Both Polanyi Society sessions will be held on December 28 at the Marriott Downtown in Philadelphia, 1201 Market Street. Each of the papers will be posted on the Polanyi Society website by early December. Room assignments will be indicated on the website as well. Following are the abstracts and details of each session.

Session I: 9:00-11:00 a.m.: Polanyi and Langer on Meaning

Robert Innis, University of Massachusetts, Lowell

Between Articulation and Symbolization: Framing Polanyi and Langer

This paper will examine two specific points of entry into, and the relations between, the work of Michael Polanyi and Susanne Langer. It will show that ‘articulation’ and ‘symbolization’ are not to be taken in the exclusive sense as explicit and methodologically controlled processes of sense-giving but rather are operative at both the ‘lower’ and the ‘higher’ thresholds of meaning-making. Such a way of looking at the relation between these two philosophical projects allows us to bring them into close relation with key figures in the classic American pragmatist tradition, on the one hand, and with broad based attempts to develop a nuanced science of mind, on the other hand, that respects the results of empirical research.

Walter Gulick, Montana State University Billings

Langer and Polanyi: Existential Meaning

A person experiences existential meaning when that person’s significant interests or concerns are thought about or acted upon so that their aims or validating contexts (perhaps a purpose, value, community, or sense of the sacred) are engaged in a way that is felt to matter. Polanyi and Langer understood that experiences of existential meaning are embodied phenomena grounded in evolutionary and psychological processes, but that they are also enculturated, symbolized experiences, having a normative dimension. In refusing to be put off by charges of psychologism or lack of logical rigor, Polanyi and Langer have helped philosophy retain its engagement with what is significant to people. This paper builds upon Langer’s articulation of the primacy of felt action and Polanyi’s (and Prosch’s) taxonomy of meaning construction to explore the ways persons experience meaning in life.

Session Respondent: Vincent Colapietro, Penn State University

Session II: 5:15-7:15 p.m.: Polanyi on Normative Thought and Action

Ronald L. Hall, Stetson University

Natural Normativity: Polanyi and/or Searle

In this paper I argue that Michael Polanyi offers an ontology of normativity in nature that can be read as neither a return to Aristotelian teleology simpliciter, nor a denial of the intrinsic ontological status of natural normativity. In fact, I argue that Polanyi has a view of natural normativity that is indeed ontologically intrinsic. To show this I compare Polanyi’s view with that of John Searle. I claim that some insightful distinctions that Searle draws can enlarge and clarify Polanyi’s position; at the same time I claim that the application of these same insights ultimately serves to sharpen a basic difference between Polanyi and Searle regarding their respective views of

natural normativity. I conclude with some brief remarks on some of the implications of Polanyi's ontology of natural normativity for some contemporary debates between religion and science. I claim that Polanyi's ontology of intrinsic natural normativity is independent of any commitment to theism. I do not, however, claim that Polanyi's view is incompatible with theism. In this regard, the ontology of intrinsic natural normativity that I derive from Polanyi offers a way between the two sides of the current impasse on the issue of evolution and intelligent design.
Paper Respondent: Michael Raposa, Lehigh University

Charles Lowney, Washington and Lee University

From Science to Spirituality: A Polanyian Perspective on Moral Law and Virtue For Itself

Polanyi's analysis of knowing as a skill dependent on tacit knowledge, his appreciation of the heuristic nature of the question and the emergence of an answer, and his understanding of the intentional from-to structure of experience apply to moral knowledge as well as scientific knowledge. In this paper, I use Polanyi's philosophy to address two riddles in moral philosophy: first, the very anti-Kantian tension between the spirit and the letter of the law; second, the very Kantian idea that virtue is to be done for its own sake and not for the benefits that it may produce. Showing how Polanyi's philosophy addresses these paradoxes reveals that the good person achieves a way of being that answers questions inherent in the human condition. Furthermore, the Polanyian framework has the benefit of unifying aspects of Aristotelian, Kantian, Utilitarian and religious ethics in a vibrant, forward-focused synthesis.

Paper Respondent: Drew Leder, Loyola College in Maryland

Notes on Contributors

John V. Apczynski (APCZYNSK@sbu.edu), Professor of Theology at St. Bonaventure University, works in the area of contemporary religious thought and is a long-time student of Polanyi's thought. His essay, "What Does Paris Have To Do with Assisi?" (in *Finding Francis* [Palgrave/Macmillan, forthcoming]), is a defense of Bonaventure's theological portrait of Francis.

Robert Doede (bobd@twu.ca) is an Associate Professor of Philosophy at Trinity Western University, Langley, British Columbia, Canada. His essay "On Mind and Meaning" appeared in *TAD* 20:2 (1993-94): 28-42.

Andrew Grosso (rector@trinityks.org) earned a Ph. D. at Marquette University and currently Rector at Trinity Episcopal Church in Atchinson, KS.

William J. Kelleher (wjkellpro@aol.com) earned his Ph.D. in political science at the University of California, Santa Barbara (1984). His fields of specialty include political theory, American politics, and public law. His dissertation was on Karl Marx's axiology, or non-economic theory of value. He has worked as a free lance writer, legal researcher, lecturer in political science, and citizenship teacher in Los Angeles. His first book, *The New Election Game* (1987), is an examination of presidential election reforms, including Internet voting. His second book, *Progressive Logic* (2005), examines the principles of value that American progressives have followed throughout their history.

Respect and Empathy in the Social Science Writings of Michael Polanyi

William Kelleher

ABSTRACT Key Words: appraisal, anthropogenesis, calling, the determinist fallacy, evolutionary biology, fallacies, fourfold classification of deliberate choice, historicism, method, moral judgments, morphogenetic field, morphological rightness, Napoleon, natural respect, personhood, the rational person standard, the rationalist fallacy, rationality, responsibility, vitalism.

This essay first explains Polanyi's theory of the evolutionary genesis of humanity's distinctive calling to strive to be rational. It shows how Polanyi envisioned human rationality as necessarily entailing a natural respect for other people. Finally, the essay shows how Polanyi shapes a method for a critical social science, which is consistent with his understanding of human rationality.

Introduction

Michael Polanyi's writings on human nature entail a theory of respect as a natural human passion. That is, human beings have both an innate sense of respect for one another, and an innate need to feel respected by other people. I defend this thesis in this essay. Polanyi's theory of respect, of course, has implications for what is traditionally known as "normative social theory," or theories as to how societies ought to organize themselves. I show that Polanyi's opinion on this matter is consistent with his theory of natural respect.

However, Polanyi's theory of respect also plays another central role in his thought on social science, which some readers may find surprising. While social scientists writing on methodology have often stressed "value-neutrality," Polanyi's approach to social science is shaped to its core by the principle of respect.

Much of Polanyi's writing is in opposition to what he called the "positivistic conception of science."¹ Polanyi understood this approach to knowing to assume, among other things, a mechanistic theory of nature, and the possibility of "objective," value-free knowledge, which can be obtained and verified by a set of methodological rules that any scientist could apply in a routine and mechanical fashion.

Polanyi rejected this idea of knowledge and of science as a "massive modern absurdity" (PK, 9). For him, the notion that scientific knowledge is different than, or superior to, the knowledge of values is way off base. Indeed, the positivistic "premises of science" are themselves a system of values (PK, 160 f). Across the fields of knowledge, including natural and social science, and the humanities, "the act of knowing includes an appraisal" (PK, 17). This appraisal is never "objective," but is always a matter of *personal skill and judgment*. Others may disagree with it, and it could be mistaken.

Polanyi understood this misguided positivistic theory of science to shape the premises of both natural and social science. He warns that positivism's "universal mechanistic conception of things may threaten completely to denature our image of man" (PK, 160). Thus, in Polanyi's view, there is not a sharp separation in the approach to the study of man, one "factual" and the other "valuational." He wrote, "our powers of understanding control equally both these domains."²

I define “social science” as the systematic effort to understand and explain human behavior. This aim is shared by the various fields of social science. Each field focuses on a distinct aspect of human behavior. Traditionally, these fields include anthropology, economics, geography, history, political science, psychology, and sociology. There is by no means complete uniformity of agreement as to the methods by which the social sciences are to carry out their task. Indeed, some have argued that there is no uniformity at all.³

Nevertheless, Polanyi assumed that, at the time of his writing, a standard theory of methodology existed for the social sciences. This approach was exemplified for him by what he called “behaviorism.”⁴ By this term he meant to include all those approaches to the study of human, and animal, behavior that relied upon the “positivistic conception of science.” Polanyi rejected behaviorism especially because it imposes a “crippling mutilation” on its sentient, intelligent, and resourceful subject matter (PK, 381). He was not shy about stating the magnitude of his project for reshaping humanity’s understanding of knowledge and of science. He hoped that his writings would help “to establish a stable alternative to the objectivist position” (PK, 315).

I will argue that Polanyi has gone a long way toward fulfilling his project, at least for the social sciences. The materials needed to formulate a general approach for social science already exist in Polanyi’s writings. However, it is a “method” in a very qualified sense. For Polanyi, a method consists of a set of “rules of art,” or “maxims.” “Maxims are rules, the correct application of which is part of the art which they govern” (PK, 31). Polanyi asserts that the interpretation and application of methodological “rules” is always a personal act, depending on the education, skill, and other personal qualities of the person (PK, 123).

Thus, he does not preclude the possibility of a common approach for social science, but only warns his readers not to expect a mechanical application of that approach’s maxims. What then would the maxims, or rules of art, be for a Polyanian social science?

One maxim is that “indwelling, or empathy, is the proper means of knowing man and the humanities.”⁵ Indwelling entails the “pouring of oneself” into the subject matter one seeks to understand (PK, 60 f). I examine Polanyi’s main book on the conduct of social science, *The Study of Man*. This short work models how his approach is carried out in practice. Among other things, he shows what it means to have a social science based on *appraisal*. The standard for this appraisal is humanity’s *calling*, including humanity’s natural respect for the members of its species.

My discussion will shed some light on what Polanyi meant when he wrote to Raymond Aron:

Let me confess, first of all, to the perhaps childish pleasure of being taken so seriously by a man of your distinction. But there is a good deal more than that in my reaction to your essay on *Personal Knowledge* in relation to Weber’s work. You will better appreciate the service which you have done to my thought by developing it in this direction if I tell you that the whole enterprise of *Personal Knowledge* was undertaken with a view to reconsider the social sciences.⁶

To make my case for how Polanyi has “reconsidered the social sciences,” I will have to start at the beginning – that is, the emergence of life from inanimate matter.

I: Man's Morphogenic Field

A) Anthropogenesis

Among the most outstanding features of Polanyi's theory of evolution are his humanizing of the process, and his great enthusiasm for it. Polanyi portrays evolution not as a dry, mechanical process of chance mutation and natural selection, but as a grand drama, full of noble striving, success, and failure. Life did not arise from inanimate matter as an accidental confluence of causal factors, but as a "rebellion against meaningless inanimate being" (PK, 389). From its inception, life has emerged "to challenge the surrounding deserts of deathless inanimate matter" (PK, 389). Hence, although tinged with tragedy, due to the inevitability of death, life has a heroic purpose.

For Polanyi, "the first rise of living individuals overcame the meaninglessness of the universe by establishing in it centers of subjective interests" (PK, 389). By such "centers," he means organisms which can *feel* their needs and which have the agency and resourcefulness necessary to pursue the satisfaction of those needs. Self-interested pursuits gave them something to live for. However, this "first revolution was incomplete, for a self-centered life ending in death has little meaning" (PK, 389).

The emergence of humanity constitutes "the second major rebellion against meaningless inanimate being" (PK, 389). Polanyi distinguishes humans from other forms of life chiefly by our superior capacity for abstract and creative thought, the responsibility that gives us, and the enduring cultural works we have created. Human culture can be understood as an emergent property of human interaction. Indeed, the "calling" of man is to participate in the life of human culture. "When man participates in this life his body ceases to be merely an instrument of self-indulgence and becomes a condition of his calling" (PK, 389). While animals find meaning as "centers of subjective interests, the rise of human thought in its turn overcame these subjective interests by its universal intent" (PK, 389). Thus, human culture consists largely of understandings and practices that strive to transcend individual life.

What are the key elements of Polanyi's notions of "calling," "universal intent," and "responsibility"? Because our human calling is to strive for knowledge and beliefs that we can hold with universal intent, this "second revolution [i.e., man's emergence] aspires to eternal meaning" (PK, 389). Of course, human mortality and "the finitude of man's condition" render his aspirations hazardous. "Yet the precarious foothold gained by man in the realm of ideas lends sufficient meaning to his brief existence" (PK, 389).

Polanyi's theory of evolution as the "rebellion" of meaning against the meaningless entails a vision of the organic material of life as far richer in significance than the dominant "objectivistic" theory of organic matter as being no more than physio-chemical stuff. His is a theory of "living matter," as opposed to the lifeless matter contemplated by the positivistic sciences (PK, 343 f). For Polanyi, the very material of which a multitude of individuals are made is the living base for the emergent property of embodied meaning. In other words, there is purpose in living matter.

At its most basic level, the growth, development, and maturation of individual organisms entail a striving for "morphological rightness." This striving is an aspect of the organism's meaning. Clearly, living organic matter is not amorphous. Individuals always come in distinct forms, and follow a general pattern for their species. The

growth of individuals within a species, then, can be understood as “operating under the direction of a morphogenetic field” (PK, 389).

This “field” is contained within the “germ plasm,” or gene pool, of its species. The individual’s development follows “a line of force in such a field” (PK, 389). Each individual exists as a particular stage of realization along the lines of “the gradient of a potentiality” (PK, 389). Each individual’s form is made of the organic material of which it is constituted. This form, then, is “a biotic achievement” (PK, 402 f). That is, this shape is the current result of *the material’s* continuous striving to become what it naturally intends to become. In the individual, this is the process of maturation. Polanyi also suggests that the same principle of striving for morphological rightness can explain a wide diversity of biological events, such as the growth of an embryo, the repair of an injury, or recuperation after an illness.

In Polanyi’s “field concept,” the “morphogenetic field ... is then defined as the agency,” which evokes and guides growth, etc. using “morphological rightness as its standard of achievement” (PK, 389). Polanyi seems to envision the impetus of fields as a base from which self-reflective consciousness (i.e., the capacity to feel needs), and deliberate efforts at need satisfaction, have emerged. “Though these [field induced] strivings [such as growth, recuperation after an illness, etc.] are continuous with the conscious strivings of higher animals, they are, of course, in general, neither conscious nor deliberate” (PK, 404). Therefore, “All the operations of the ‘tacit component’ ... will be subsumed under this field conception” (PK, 389).

The aims of acting individuals, then, can be understood as operating within a nest of mutually supportive gradations of emergent levels of purpose. The higher level of aims includes such self-conscious deliberate activity as that of an animal hunting. Polanyi notes that “at the upper levels ... centers are called upon to exercise responsible choices” (PK, 402 f). But the lower level of purpose, as we have seen, is more in the nature of organic matter itself. Starting from their conscious aims, living individuals, then, are animated by “ever further descending levels of sentient effort” (PK, 397). Or, to reverse the sequence, organic aims merge upwards into conscious purposes. In general, these aims share a life-affirming tendency in the organism.

Polanyi is fully aware that his account of the emergence of life as a “rebellion against meaningless inanimate being” (PK, 389), and of organic matter as aiming at “morphological rightness” attributes a form of intentionality, or purpose, to these processes. Such intentionality is strictly prohibited within positivistic biology, and generally dismissed as “vitalism.” But Polanyi is not apologetic about his stance. Indeed, he is as defiant of wrongheaded convention as life is defiant of meaningless death. “If this be vitalism,” he declares, “then vitalism is mere common sense, which can be ignored only by a truculently bigoted mechanistic outlook” (PK, 390).

Positivistic biology is unable to explain this awesome drama of intentional growth, regeneration, and action. So, Polanyi calls attention to this failure to account for the obvious mental dimension of living organisms, and sketches in some of the aspects of his new focus for biology. This new approach to evolutionary biology focuses on what Polanyi calls “the emergence of sentience and personhood” (PK, 402). Polanyi’s conception of “personhood” combines, like the Taoist Yin and Yang, the mental and physical dimensions of an astonishingly wide array of organisms.

In his examination of evolution, Polanyi is primarily concerned with “the contemplation of anthropogenesis” (PK, 393). That is, with the “rise of man,” as the self-conscious creator of human culture. Polanyi

acknowledges that scientists “do not know at what stage of evolution consciousness awakened” (PK, 388). But at some point it must have emerged. “Already some 400 million years ago, at a stage represented by worms, our ancestors had formed a major ganglion in the forward tip of their elongated body,” which could, among other things, “direct locomotion” (PK, 388). Gradually, as this section “acquired a controlling position,” a “gradient” was established “between the higher and lower functions within the organism” (PK, 388). In the process, a supportive “nervous system is formed to carry out ever more extensive and elaborate operations of self control” (PK, 388). An active center emerged, “which uses the other parts of the body for its sustenance and as its tools. Within this active center, the animal’s personhood is intensified in relation to a subservient body” (PK, 388).

Clearly, this process of evolutionary emergence was not all physical. Indeed, the emerging nervous system became the base from which mental operations emerged. Polanyi observes that over the long course of evolution there has been “a cumulative trend of changes tending towards higher levels of organization, among which the deepening of sentience and the rise of thought are the most conspicuous” (PK, 384).

Sentience is the feeling, or experience, which an organism has of itself. Therefore, when Polanyi mentions “the deepening of sentience,” he is referring to the gradual enrichment of the self-reflective experience of itself within individual organisms. As I indicated above, Polanyi admits to not knowing just when, in the course of evolution, an organism began to distinguish itself from its environs. Nonetheless, this capacity for self-reflection would eventually rise from the mere awareness of such simple needs as hunger, to the human contemplation of its own origins.

In “personhood,” then, there emerged an increasing capacity for means-end reasoning, and problem solving, based on the organism’s felt needs and knowledge of its environment. As examples of what the earlier stages in the evolution of personhood may have been like, he notes that contemporary protozoa “engage in a variety of deliberate purposive activities.” And, citing experts, “the amoeba hunts for food” (PK, 387). Such deliberative action presupposes, at least, a body with the capacities to feel its needs, and to learn how to act so as to satisfy those needs. Such action also entails a notion of agency, or self-guidance, which includes the ability to make choices based upon a combination of perceptions, learned knowledge, and personal judgment. As personhood evolved, more sophisticated animals became capable of feeling intellectual joy and frustration (PK, 388, 367).

Polanyi sees in the process of evolution, not mere clues, but “direct evidence” of the “rise of human consciousness” (PK, 386). This creative realization of life’s potential for self-reflective personhood has thus far resulted in “the cranial dominance which gives rise to the characteristic position of the mind in the body of man” (PK, 388). Thus, from “a seed of submicroscopic living particles – and from inanimate beginnings lying beyond these – we see emerging a race of sentient, responsible and creative beings” (PK, 387).

“Personhood,” for Polanyi, then, refers to the mental/physical complex system, which is the hallmark, the Yin and Yang, of every sentient creature. Its essential element is embodied mental capacities. It is a general conception in which humanity participates, not as the final realization, but only as the current stage of evolution. Because evolution is a process entailing a large measure of creativity, what the future will bring must remain uncertain.

A central theme in the story of evolution, then, is about the “growth and hardening of personhood” (PK, 388). If the evolution of personhood is understood to entail ever intensifying mental capacities in an

increasingly complex organism, then “man’s sudden rise from mute beasthood” (PK, 388) can be appreciated as an astonishing creative leap in evolution. Humanity’s capacity for symbolic representation, as seen in our thought and language, for example, have resulted in the creation of “a lasting articulate framework of thought” (PK, 388); in other words, human culture. It is this new capacity for language and thought, which are only developed in human society, that results in individuals with the ability to rise above “the self-centeredness of animal personhood” (PK, 388), to the unprecedented level of “the responsible personhood of thoughtful man” (PK, 395).

When he refers to humanity’s “responsible personhood” he means that, in his view, the human mind has an innate, or natural, orientation towards other members of its species that is quite unlike any other form of personhood. Thus, “at the highest level of personhood we meet man’s moral sense” (TD, 51). This capacity marks a unique stage in the evolution of personhood. In the rest of this essay we will explore some of the main implications of this difference in human personhood.

B) Man’s Calling and Responsibility

In Polanyi’s view, humanity’s mental capacities *set for them* a distinctive human “calling.” He notes that “we are not responsible [for] our calling” (PK, 379, cf. 65 f). It is a part of our genetic inheritance. In other words, our calling is “determined . . . by our innate faculties” (PK, 379). Chief among these are our capacities for abstract and creative thought, and for language.

His notion of calling refers to the individual’s experience of “morphological rightness.” That is, our calling is an innate aim towards which we humans strive, at least when we are acting distinctively as humans. Humans act distinctively, or *rightly*, as humans when they engage in the pursuit of knowledge or beliefs which they can authentically hold with “universal intent.” This aim is in our organic form.

This calling emerged in evolution as a part of, as mentioned above, “the second major rebellion against meaningless inanimate being.” I have also quoted Polanyi’s statement that while animals find meaning as “centers of subjective interests, the rise of human thought in its turn overcame these subjective interests by its universal intent” (PK, 389). Thought is most distinctively human when it is “an active mental process, aiming at universality” (PK, 318). Thus, man differs from animals largely because he alone “aspires to eternal meaning” (PK, 389).

Man’s calling is most fully answered when he is dwelling in beliefs he holds with universal intent. This satisfies the “morphological rightness” for humans. Of course, no one can do this every moment. To be in the distinctively human state is an achievement, which cannot be constantly sustained. The alternative to that state seems to be conditions we share with animals. Several activities, such as sex, eating, drinking, eliminating, playing, and sleeping are obvious examples of aspects of living that humans share with animals. These events are different from dwelling in beliefs held with universal intent. However, these aspects of life are not necessarily degrading because they are shared with animals; indeed, some are quite noble. Animals and people experience a common pleasure at problem solving (PK, 122). Across species, a solution can be “something inherently satisfying” (PK, 127). Because of our superior capacity for abstract problem solving, we humans can, after making an effort, experience the “joy of grasping mathematics” (PK, 321). That is an elevated form of the pleasure in problem solving that we share with animals.

Thus, people have what might be called their “animal side.” While Polanyi does not use that exact term, he does make the distinction: “In a conflict between our appetitive and our intelligent person we may side with one or the other” (PK, 320). Thus, humans can *choose* to be in their distinctively human state, and this above all distinguishes humans from the animals. For, animals appear to be incapable of holding themselves to abstract moral principles, or of dwelling in an articulated belief with universal intent.

People may experience the calling of their morphogenetic field in various ways, and to various degrees, depending on the individual’s natural, and especially neurological, constitution. As part of their “morphological rightness,” some people may feel, as Polanyi strongly did, “an innate affinity for making contact with reality” (PK, 403). Other persons may experience this “affinity.” They may feel what Polanyi calls a “natural urge for achieving coherence” (PK, 301). Others may experience their calling less as an urge or an affinity, and more as a “sense of responsibility” (PK, 323, 324 f). Thus, the “sense of a pre-existent task makes the shaping of knowledge a responsible act” (SM, 36). In any case, the individual, who is acting in his or her distinctive capacity as human, will strive to experience himself or herself as morphologically *right*. This striving is all we humans are called by our nature to do.

Polanyi also distinguishes between animals and humans by their respective responsibilities in life. The members of all species with the capacity to act are responsible for sustaining their lives. One decision to disregard a movement in the grass and to keep on grazing may cost a gazelle, for example, its life. Humans can make such misjudgments, too. But humans are also responsible for finding and articulating their beliefs as to what may be true and right.

“Human responsibility,” as with animals, involves the liability “to failure. For no responsibility is taken where no hazard is to be met, and a hazard is a liability to failure” (SM, 67). The distinctively human hazard is that one’s efforts to fulfill one’s calling may fail. One may strive, yet find nothing to believe in with universal intent. Or, one’s beliefs, held with universal intent, may turn out to be wrong. Knowing the risks, one can have beliefs held with universal intent, and “admit they could be mistaken” (PK, 145).

Polanyi realizes that finding the universal truth may appear “on reflection impossible of achievement” (PK, 324). Paradoxically, our striving to know with universal intent can only be undertaken within the limitations of our historical conditions. Our acculturation, or “our early upbringing within our culture” (PK, 379, cf. 322-324, 346), determines to a large extent what intellectual instruments we will have for the pursuit of our calling. Of course, we are also “limited by our innate capabilities” (PK, 322). Despite these limitations, the individual retains his autonomy, and can pursue his calling in his own way within a “milieu which conditions but never fully determines [his] actions” (PK, 397).

Speaking for himself, as he often does, Polanyi shares his self-understanding that “in spite of the hazards involved, I am called upon ... to pursue knowledge and to declare it responsibly, within my own limited possibilities” (PK, 315, 373). Further:

I started as a person intellectually fashioned by a particular idiom acquired through my affiliation to a civilization that prevailed in places where I had grown up, at this particular period of history. This has been the matrix of all my intellectual efforts. Within it I was to find my problem and seek the terms for its solution (PK, 252).

Thus, for the rest of us, as for himself, the “historical setting in which we have grown up” can be accepted “as the assignment of our particular problem” (PK, 324).

Man’s calling does *not* require the *achievement* of “objective universal truth.” Instead, a sincere commitment is of itself “legitimate grounds for the affirmation of personal convictions with universal intent” (PK, 324). In other words, our personhood does not require a final achievement, but only that we *aspire* responsibly to understand what is true and right with universal intent. “Our personhood is assured by our simultaneous contact with universal aspirations which place us in a transcendent perspective” (PK, 324).

C) Respect as an Aspect of Universal Intent

One of the theses of this essay is that, for Polanyi, human respect is an essential element of human personhood. That is, to act in one’s distinctively human capacity is to have respect for others, and to expect respect from them. This is not an “exchange theory.” For Polanyi, respect is not given, like a commodity, with an equal value expected as of right in return. On the contrary, for Polanyi, respect is naturally given in the very act of holding beliefs with universal intent. Respect for others, and the desire for respect from them, is a natural orientation of the human mind when it is operating as quintessentially human. Indeed, respect for all other human minds is a tacit component of universal intent.

This respect can be seen implicated by the communicative element in Polanyi’s theory of “universal intent.” Universal intent, for Polanyi, is one way by which individual humans relate to one another. That is, it is a way by which a person addresses other rational minds. The person engaged in thought is participating in human culture. This culture is largely the product of intelligent minds, sometimes great minds, acting to the best of their ability to, among other things, establish the idioms within which other persons may participate and contribute to, cultural meanings. Great minds have also set the standards by which knowledge is to be attained and validated. Humanity and human culture, or our “noosphere,” are of a dynamic piece; that is, the two interdependent dimensions of human personhood. “Our race as a whole achieved such personhood by creating its own noosphere: the only noosphere in the world” (PK, 389). Because of this participatory creative activity, human culture is a great communicative enterprise.

When understood empathically, Polanyi’s conception of “universal intent” is not just a *logical* category, for it entails a wide range of human emotions. For Polanyi, the communicative motive in universal intent includes a reaching out to others for their fellowship, or companionship. Such companionship need not be of an immediate physical presence, but can be only an intellectual agreement. The “conviviality” of this motive is a tacit component of humanity’s natural “intellectual passions,” as Polanyi understands them. For example, one of the primary intellectual passions in Polanyi’s understanding of the human mind is the “persuasive passion.” He calls it “the mainspring of all fundamental controversy” (PK, 159).

For instance, once a discovery in science has been made, “the ardor of discovery is transformed into a craving to convince” (PK, 171). That is, when a belief is held with universal intent, the holder becomes an advocate for its truth. This passion is a part of “a process of verification in which the act of making sure of one’s own claims is coupled with the efforts of getting them accepted by others” (PK, 171). A scientific researcher, then, who makes and declares a discovery, “endows . . . the results of such acts with a claim to universal validity. For when you believe that your discovery reveals a hidden reality, you will expect it to be recognized equally

by others” (SM, 36). The fruits of our “intellectual passions . . . demand recognition” (PK, 195). People, it seems, appreciate recognition for having fulfilled their calling to contribute to human culture. Thus, the discoverer of a new truth may feel like “converting everybody to his way of seeing things” (PK, 150).

The “persuasive passion” faces a “logical gap.” The discoverer with a new insight is separated from those who do not have that insight. His new knowledge distances him or her from the fellowship of others. Thus, his “persuasive passion spurs him now to cross this gap by converting everybody to his way of seeing things” (PK, 150). So, knowledge or beliefs held with universal intent are held with a concern for the companionship of others. This intention to bring others into the purview of one’s truths is a key element of “the participation of the speaker in any sincere statement of fact” (PK, 254). The very assertion of a fact as a “fact,” contains within it a “persuasive feeling” as a tacit coefficient of the assertion. Without that feeling, such an assertion “is a mere form of words saying nothing” (PK, 254).

To assert that “p is true” can be understood as a declaration to all other rational minds “that I identify myself with the content of the factual sentence p” (PK, 254). Thus, speaking for discoverers whose findings have been rebuffed, Polanyi writes, “we suffer when a vision of reality to which we have committed ourselves is contemptuously ignored by others” (PK, 150). The frustrated desire for recognition and respect can be painful.

The persuasive passion can “vary over all possible intensities” (PK, 305). In its most intense form, one feels that one’s “vision must conquer or die” (PK, 150). The term “conquer,” as used here, may seem more Nietzschean than Polanyi means. Rather than an expression of the “will to power,” Polanyi’s use of “conquer” leans more towards the sense of a suitor conquering the one whose heart is sought. It is companionship that one seeks, not prisoners of war.

Another important intellectual passion for Polanyi is the heuristic passion. This is the passion to solve problems, and to discover new insights. Like the passion to persuade, due to its universal aspirations, it, too, is oriented towards others, and not simply a self-indulgence, or for one’s private self-satisfaction. In science, “the discoverer seeks a solution to a problem that is satisfying and compelling both for himself and everybody else” (PK, 301). Unlike the persuasive passion, the heuristic passion “sets out not to conquer, but to enrich the world . . . it asks that its gift to humanity be accepted by all” (PK, 150). Clearly, both the persuasive and the heuristic passions entail an individual acting in a special kind of relation to other rational minds, a relation which both gives and expects respect.

There is another *communal element* involved in asserting a scientific fact, which Polanyi finds in himself, and observes in others. “I cannot speak of a scientific fact, . . . of what is just or unjust, [etc.] without implying a reference to a consensus” (PK, 209). In all such matters, “I express what I believe the consensus ought to be in respect to whatever I speak of” (PK, 209). The phrase “reference to a consensus” suggests that, in Polanyi’s understanding, when the individual scientist, or any other person, asserts a belief as true or right, he or she always acts with other people in mind, as a reference group.

As in romance, the passion to persuade others of one’s truths may result in social conflict. In Polanyi’s view, “All our cultural values are the deposit of a succession of past upheavals” (PK, 201). The accepted principles of science today are, therefore, largely the result of “great controversies and upheavals” in the past (PK, 170, 181). One consequence of these competitions to persuade is that our scientific outlook has been molded by “generations of great men, who overwhelmed the whole of modern humanity by the power of their convictions”

(PK, 171). Our society's current understanding of "science" consists of "a vast system of beliefs, deeply rooted in our history [which are] cultivated today by a specially organized part of our society" (PK, 171). These elites of science often act as arbiters in controversies, and determine how recognition is to be distributed.

Respect plays a crucial tacit role in Polanyi's theory of the transmission of culture. Much of culture is transmitted by the example of adults to youth. Young people absorb their cultural forms and lore by "pouring their minds into its fabric" (PK, 173). This requires a submission to authority. "To learn by example is to submit to authority" (PK, 53). The art of speaking, which is a large part of culture, is tacitly transmitted "from an authoritative person to a trusting pupil" (PK, 206). Such trusting submission constitutes the "fiduciary" relationship the young have with those teachers, masters, or other authorities (PK, 207 f).

Arts and crafts, including scientific research, are best learned through "personal contact" (PK, 53). As an apprentice to any kind of cultural achievement, you follow the master because "you trust his manner of doing things" (PK, 53). Clearly, authority without respect would lack legitimacy, and without respect trust could not be extended. Therefore, cultural teachers, as transmitters of a "fiduciary framework," are "listened to as a voice which commands respect" (PK, 174).

This discussion of intellectual passions suggests that universal intent may be an operation of cognitive faculties which have their roots in basic human social emotions. There are several threads tying universal intent and social emotions together in Polanyi's writings. Polanyi acknowledged the peak of social emotions when he wrote that "we know man to be the most precious fruit of creation" (PK, 385). He wrote more generally of "conviviality" as being rooted in "the primitive sentiments of fellowship that exist previous to articulation among all groups of men and even among animals" (PK, 209). Insofar as universal intent tacitly assumes an individual predisposed to experience care, concern, or positive regard for the thoughts and understandings of other members of his or her species, it may be an extension of social emotions into cognition.

There are many books on the neuro-bases of the human moral predisposition. Among these is Richard Leakey's *The People of the Lake*.⁷ Leakey suggests that following the divergence from the common ancestor of hominids and primates roughly six million years ago, primates and hominids, while both highly social, took different paths in their modes of survival. Primates followed the path of individuals foraging in groups as their primary mode of survival. Today, as Franz DeWaal shows, primates do very little sharing of food among adults. They are still individual foragers, in effect separating economics from politics.⁸

But hominids have blazed a different trail. Just as social as primates, if not more so, hominids uniquely developed a division of labor for food collection, and food sharing among adults within their primary group. Individuals may have tended to breed selectively for characteristics for sharing, thus intensifying the natural care for others. Some selfish and uncooperative individuals may have been banished from the group, or shunned as less desirable breeding partners. In this way, sharing and cooperation could have become species characteristics bred into the hominid brain, just as species characteristics have been bred into the typical brain of any species. As humans emerged with their distinctively massive cortex, they inherited the social emotions typical of hominids. The capacity for abstract thought would, then, have emerged within a caring intentional structure as an extension of our innate social emotions.

In other words, Polanyi seems to complement such views as those of Leakey and DeWaal by envisioning respect for others as an integral process of human cognition, which naturally occurs as one person recognizes

the other as a human individual. The knower's recognition of another human *as human* is a cognitive achievement, while the other's ontological status as an individual human is a biological achievement. Natural respect is not a freely given reward for an achievement, but an innate cognitive function. (This notion of natural respect differs from prescriptive "natural law" theories in that it does not say how persons *ought* to regard one another, but how they do so, at least in the absence of a desensitizing socialization – which will be discussed further below, in Part II, B.)

D) Indwelling with Respect

Polanyi's account of anthropogenesis leads into his understanding of man's calling and responsibility. He acknowledges that his depiction of life striving for the intensification of meaning implies a type of vitalism. He knew painfully well that this view is anathema to the dominant paradigm in biology. Yet, he had the courage to declare that his "vitalism is mere common sense," and that the dominant school of biology has a "bigoted mechanistic outlook." In making these assertions, he seems quite sure of himself. He then goes on to *instruct* the dominant biologists that "biology would gain greatly in scope and depth by addressing itself more candidly to the fundamental features of life" (PK, 399). The principal feature he has in mind is personhood, the complex mental/physical unity that we humans share in various degrees with other living organisms.

Polanyi not only rejects the lifeless mechanistic "laws of nature" that positivistic biology relies upon, but he boldly proposes "new laws of nature, which would allow for the rise of consciousness in material processes" (PK, 397). Included among these "new laws of nature" must be "the assumption that living beings have peculiar faculties for achieving biotic success" (PK, 399). These "peculiar faculties" sustain the natural striving of an organism for "morphological rightness." Accepting this dimension of all organisms as fact is essential for explaining growth, regeneration, etc.

After considering the magnitude of such statements, one may wonder how he can know so much more than the securely entrenched, well rewarded, highly esteemed dominant school of biology. How is it that his "common sense" illuminates new vistas on life about which the positivistic biologists are apparently in denial?

The old saying, "what you see depends upon where you stand," helps to explain why Polanyi has such confidence in his new "suggested explanatory framework" (PK, 400). Polanyi takes a very different approach to knowing than the positivists. He refers to his approach as "indwelling." "All understanding is based on our dwelling in the particulars of that which we comprehend. ... Indwelling is also the instrument by which comprehensive entities are known throughout the world."⁹

This is a very empathic approach. The observer makes an effort to dwell within the particulars of that which he is observing. He allows these particulars to become a part of himself in his effort to make sense of the subject as a whole (PK, 59 f). A skilful, personal integration of particulars is central to this process of observation.

In contrast, the positivist strives for detachment, as an alien observer who insists that the object is "out there," to be described and only known objectively. All he sees is the physical surface – whether things in motion, or living organisms. The extremists do not even allow themselves to imagine any sort of mental component in the objects they observe, not even the higher animals or other humans! For them the very thought of empathically dwelling in the mental component, or intentionality, of a subject is strictly prohibited by the rules of their interpretive framework. They only acknowledge the physical half of human personhood. But Polanyian

integrative indwelling permits awareness of mental components as natural parts of the whole of a living subject (PK, 372f).

One essential element of Polanyi's empathic approach is mutuality. That is, he does not address the living subject as an alien object with no human connections. To the contrary, he addresses other forms of life as manifestations of natural principles of which he too is a manifestation. "Biology is life reflecting upon itself" (PK, 347, 363). From this point of view, an embodied mental component, containing such factors as self-awareness, intentionality, resourcefulness, and agency, however rudimentary in scale, ties the human observer to all the life forms he encounters. As he writes, "Such indwelling is a participation of ours in the existence of that which we comprehend" (PK, x). A recognition and acknowledgement of some degree of mutuality between observer and subject, then, is an element of this participation. As I will show, Polanyi also uses the word "companionship" to refer to this intimate relationship between scientist and subject matter.

His theory of evolution as a process of "emergence," then, is not known to him in some alien, detached way; instead, this "kind of emergence is known to us from the inside" (PK, 395). In the Polanyian "method," the human observer *identifies* himself or herself with the embodied mental components of the subject. This *indwelling* enables the observer to comprehend the "sentient effort," or strivings, of other living organisms.

As an accomplished scientific researcher, Polanyi conveys his understanding of the intentionality of organic matter by reference to his personal experience. Anyone who has striven to solve a problem can use his or her personal experience to empathize with individual growth and the intentionality of "organic evolution" (PK, x). Thus, to understand these events "from the inside," Polanyi invites us to consider "the process of scientific discovery."

In that process, the creative discoverer "is guided by his intimations of a hidden knowledge. He senses the proximity of something unknown and strives passionately towards it" (PK, 396). Where this deliberate effort results in discovery, "it is achieved by a supreme intensification of uniquely personal intimations" (PK, 396). Such personal intimations, effort, skill, and creativity cannot be accounted for mechanistically, for, machines are insentient. (Cf. PK, 389 *passim*.)

As we have seen, the growth of individual organisms entails a kind of striving to fulfill the "morphological rightness" of their species. Empathic biologists can understand the experience of such a developing individual as analogous to "mental unease that seeks appeasement of itself" (PK, 398). In other words, the "sentient effort" of a maturing organism is like our own "sense of approaching the unknown solution of a problem, and the urge to pursue it" (PK, 398). Polanyi also suggests that one consider one's own experience of "the approach of a recollection" (PK, 400). One may experience these approaches as if on a line of gradations, like a sought word or name just on the tip of one's tongue. Often, "we can experience such gradients internally" (PK, 400).

Thus, Polanyi's way of knowing starts from different premises than those of the positivistic biologists. Such premises as the mutuality of personhood and embodied mental processes, make indwelling possible, and this indwelling leads to all sorts of new understandings. "It is from the logic of indwelling that I have derived ... the conception of a stratified universe and the evolutionary panorama, leading to the rise of man ..." (PK, xi). In "the logic of indwelling," Polanyi, as a living being, employs an empathic interpretive framework for understanding other living beings. His notion of "common sense" includes an appreciation for the mutuality

in the constitution of all living beings. Of course, this is a hierarchal mutuality; that is, out of lower organisms a hierarchy of increasingly more complex and sophisticated organisms has emerged. Here, then, is the reason why he can know so much more about the nature of organic matter than the members of the dominant school of biology. He is committed to a different point of view. What you see depends upon where you stand.¹⁰

I have illustrated Polanyi's approach to understanding living organisms in my discussions of his theory of evolution and personhood. This approach can also be applied to the study of animals and humans.

Applying that approach entails bringing the particulars of a subject into one's own personhood, and absorbing and integrating the subject into oneself. Again, this process is highly empathic and personal in its application. Because the conduct of science relies on the personal judgment and personal characteristics of the particular scientist, it is "impossible to formulate any precise rule" of method, which can be carried out mechanistically and in the same manner by anyone (PK, 153). The methods of a science can only be stated as maxims, "the application of which itself forms a part of the art of knowing" (PK, 153).

In *Personal Knowledge*, Polanyi reinterprets behavioral studies of animal learning and problem solving from his own point of view. This provides numerous instances of how he applies his method of indwelling. First, he "disregards" their mechanistic model of explanation. Then he interprets the animal learning reported in their studies as "the process of discovery resulting from intelligent effort" (PK, 121).

One of Pavlov's experiments with dogs is an apt example. Pavlov deliberately frustrated dogs by presenting them with problems they thought would lead to food rewards if solved. But he made the problems too difficult to solve. The animals strained their ability to solve the problems to such a degree that it drove some of them into states of neurosis.

Without commenting on the ethical implications of the experiments, Polanyi interprets the behavior of the dogs with empathy. By extending a mutuality of personhood to them, he sees their behavior as showing "the depth to which the animal's person is involved" in such problem solving efforts. Through this indwelling "we realize . . . that the intelligence of the animal and our appreciation of it was *convivial*: it formed a link between his person and ours" (PK, 367-368). Such "conviviality" entails an empathic integrating of the subject into one's human personhood, so as to understand, as Polanyi says, its "person." The application of this indwelling method "is thus accompanied by an expansion of our fellow feeling which makes us aware of the animal's sentience" (SM, 76). This "fellow feeling" is a direct result of assuming a *proportional*, or appropriate, mutuality of personhood. Polanyi says of his indwelling method that the "feelings by which we appreciate the achievements of beings lower than ourselves, involve an extension of ourselves by which we participate in their achievements" (PK, 378).

Polanyi acknowledges that indwelling from within the framework of human personhood entails "anthropomorphic imputations." These imputations are required in his method of interpreting animal behavior. He states that they are "deliberate," and can "be justified . . . against behaviorist objections" (PK, 72). He provides some of these justifications in his discussion of evolution and personhood. We humans emerged from the same stock as our animal cohorts. Another justification is that the knowledge of animal behavior is far richer, and more commonsensical, from the Polanyian perspective than it ever could be from the alienated behaviorist view.

Polanyi's common sense leads him to his own notion of what it means to be a "person." Positivistic science attempts to study people with the methodological premises of physics and chemistry. But Polanyi rejects

this approach as only appropriate for lifeless matter. For him, a “science dealing with living persons appears now logically different from a science dealing with inanimate things” (PK, 344). A person has the capacities, among other things, “for understanding a meaning, for believing a factual statement . . . for reflecting on problems and exercising originality in solving them” (PK, 263). These, and other mental acts, all involve “an act of personal judgment” (PK, 263). Polanyi rejects positivistic efforts to reduce the functions of the human mind to those with the uniformity of a machine, like “a robot.” No such machine “can be said to think, feel, imagine, desire, mean, believe or judge something” (PK, 263, 389 f.). Polanyi insists upon a respectful model of man, and rejects any dehumanizing model of humanity, on the grounds of both factual truth and respect.

Polanyi’s method of indwelling begins with extending mutuality *from* the knower *to* the known. Already one can see in this extension of mutuality a strong suggestion of respect. Respect seems implicated because indwelling entails both an extending of oneself into the subject, and an allowing of the subject to become a part of oneself. Such *intimacy* creates an empathic relation, which Polanyi calls “companionship.”

For example, biologists can appraise the normal or abnormal characteristics of a specimen, its health or disease, with relative detachment; but when they consider the “sentience” of a creature, this “elevates our knowledge of the living being into a *critical meeting* of it” (PK, 363, 366). Then a “measure of companionship” exists between observer and subject (PK, 346). While Polanyi does not make the point explicitly, to me it seems that such companionship could not likely exist without some measure of respect for the subject.

The role of respect in indwelling becomes most apparent as the biological study of animals passes to the social scientific study of humans. For, “interpersonal relations become ampler as we deal with higher animals, and even more as we reach the inter-human level” (PK, 346). In this transition from the animal to the human subject, there is an “ascending from the I-It to the I-Thou and beyond it to the study of human greatness.”¹¹ This constitutes a qualitative change in the scientist’s “relation to his subject matter” (PK, 348). Now, the scientist encounters a fellow participant in man’s calling to know with universal intent through the idiom of his particular culture (PK, 348). “Mutuality prevails to such an extent here that the logical category of an observer facing an object . . . becomes altogether inapplicable. The I-It situation has been gradually transformed into an I-Thou relation” (PK, 346).

Respect, then, appears to be implicit, or a tacit coefficient, in the normal operations of our minds when encountering another human being with mutuality. In this person-to-person relationship, that is, when we study another person, “our knowledge of him has definitely lost the character of an observation and has become an encounter instead” (SM, 95, cf. PK, 346). Here, Polanyi uses “observation” to imply an artificial disregarding of the mutuality between observer and subject matter; not unlike, perhaps, a snub. He uses “encounter” to imply a more respectful and engaging relationship. He makes the same point when he notes that an empathic biologist engages in a “critical meeting” of sentient organisms (PK, 363). A psychiatrist, for example, takes an “I-It” superior position in relation to his disturbed patient so as to “observe the pathological mechanism in question” (PK, 263). “By contrast, to acknowledge someone as a sane person is to establish a reciprocal relation to him” (PK, 145). Likewise, “the characteristic encounter of an historian with an historical personage is continuous with the relation between the biologist and his living object” (SM, 93); i.e., steeped in the recognition of mutuality.

II: Normative Social Science

A) Respect in Human Rationality

As I have suggested, Polanyi's idea of what is morphologically right for humans entails the notion of individuals seeking knowledge or beliefs about what is true and right, which they can hold responsibly; that is, with universal intent. I have also indicated that one tacit coefficient of universal intent is the expression of respect for other rational minds, and the desire for their respect. In his main work, *Personal Knowledge*, Polanyi dwelt mostly on articulating the implications of knowing what is *true*. He only addressed the problem of knowing what is *right* as incidental to his primary concern. After the publication of *Personal Knowledge*, he started publishing essays, based on lectures about the problem of knowing what is "right." Here, he displayed the same boldness of thought that he showed in his thinking on science, evolution, and human nature. In these writings, Polanyi's conception of respect emerges into a central position.

For example, in *The Tacit Dimension*, he observes, "man's moral decisions form but a particular instance" of the general principle of "responsible human action" (TD, 52). This proposition is fundamental to Polanyi's moral thought. In this context, he means that "responsible human action" is aimed at answering man's calling to know what is *right*, in the sense of civic morality, as well as what is true, with universal intent. And in either case, one must operate within one's personal limitations, and with the idiom of one's culture. As I noted earlier, Polanyi has observed that "at the highest level of personhood we meet man's moral sense" (TD, 51). Thus, man's moral sense is one of the factors which distinguish human personhood from animal personhood. While "self-preservation" has been the rule among animals, the human "moral sense" opens up the "potentiality for obedience to higher demands" (TD, 52).

Polanyi never propounds specific "moral demands." Since he is clearly aware that morality, like scientific knowledge, must be articulated within the limitations of one's cultural idiom, he writes that "man's moral sense" is "guided by the firmament of his standards" (TD, 51). This "firmament" includes the individual pursuing his or her calling within his culture, and with his personal skills, limitations, etc. As in science, great minds can contribute insights that lesser minds would have never known without them. Thus, as people act within their distinctively human calling to know what is *right* with universal intent, their natural respect for other rational minds will rise, or intensify, to include "the capacity to feel reverence for men greater than oneself" (TD, 52).

As I have suggested, Polanyi's notion of universal intent contains within itself a natural respect for others as a tacit coefficient. In his comments on morality, Polanyi elevates that tacit component to the level of an articulated principle. People acting in their distinctive human capacity display their natural respect for one another. Of course, Polanyi was aware, as are we, of the all too numerous instances of humans failing to demonstrate their capacity to respect one another. Nevertheless, "Even when this appears absent, its mere possibility is sufficient to demand our respect" (TD, 51). In other words, for Polanyi, the mere status of human personhood is sufficient grounds for a person to be worthy of the respect of others. For, "however greatly we may love an animal, there is an emotion which no animal can evoke and which is commonly directed toward our fellow men" (TD, 51). That emotion is respect. I will expand upon this thesis in the remainder of this section.

"Respect" is a form of positive regard. Of course, positive regard can take many forms. For example, to have an interest in something is to show some positive regard for it. Simply by focusing one's attention on

one subject out of the multitude, one gives preference to it. But, respect is a different kind of positive regard. Polanyi distinguishes “respect” from other forms of positive feelings. Polanyi sought in several different forms of expression to distinguish his notion of respect for humans from the positive regard one may feel towards an animal, or a thing, or an idea. He distinguished “animal love” from human respect a second time when he wrote, “Animals may be lovable, but man alone can command respect, and in this sense we humans are the top of creation” (SM, 59). Later, in the same essay, he emphasized the point by commenting, “I have said before that man is the only creature to whom we owe respect” (SM, 86).

Even in *Personal Knowledge*, where he was not directly concerned with exploring man’s moral sense, Polanyi wrote that unlike with animals, “we owe respect to our fellow men. Hence we know man to be the most precious fruit of creation” (PK, 385). This quotation also shows that his conception of human respect had long been a part of his thought.

Polanyi tied to make clear that human respect was special. After he wrote, “man is the only creature in the world to whom we owe respect” (SM, 86), he added that this “respect” is a different “appreciation” from “that accorded to the harmonies of the inanimate world or to the excellence of lower forms of life” (SM, 86). Again, Polanyi distinguishes between respect for the truth and respect for the person when he writes, a man will “demand respect for himself on the grounds of his own respect for the truth” (SM, 62). Thus, Polanyi clearly intends to focus on a special kind of positive regard, different than that we feel for animals or ideas, and which humans “owe” only to one another.

As I have noted, Polanyi does not regard respect as a kind of commodity that people exchange, or withhold, from one another. Yet, his use of such phrases as “man alone can command respect,” or can “demand respect,” or that “we owe respect” to other people, may seem to put his notion of respect for persons on a deontological basis. But Polanyi does not regard respect merely as a duty. So, one may ask, what does he mean by “owe”?

First, let us be clear about what his conception of owing respect is *not*. His use of the word “owe” is not, like a debt, an obligation one voluntarily incurs, as by making a promise. Nor is this “owing” of respect simply his own humanistic, yet arbitrary, personal commitment. He does not base this “owing” on any articulated religious belief, although he does observe that for some Europeans “Christian aspirations spilled over into man’s secular thoughts” (TD, 57). Nor is it a pragmatic principle based on the assumption that social and economic order would not be possible without mutual respect. His theory that respect is “owed” between persons is not grounded on a social contract theory; although his special theory of the “republic of science” perhaps has social contract implications. Respect is not given as a kind of reward for good behavior. Instead, as we have seen, respect is a natural part of man’s “moral sense” as a “higher demand” than the biological strategy of “self-preservation” (TD, 52).

What, specifically, then, is the basis for Polanyi’s use of the word “owing”? His use of the word “owe” is unlike the uses of that word in many other moral theories. In common practice, that word does have other uses. For example, one might say “owing to the weather we did not go hiking.” In this sense, “owe” means “because of.” Polanyi, then, can be understood as meaning “because of” a person’s humanity, respect is due him or her; thus, “we owe respect” to man *because* he is “the most precious fruit of creation” (PK, 385).

In this usage, “owe” can also be read to imply “merit,” or that which is “fitting,” or “appropriate;” and, I suggest, “natural.” In other words, as I discussed earlier, the feeling that respect is apropos of another person emerges unconditionally, when one rational mind recognizes the human rationality, or “sanity,” in another. Indeed, “We acknowledge the sanity of another man’s mind by paying respect to him. By this act of *appreciation* we enter into a *fellowship* with him and acknowledge that we share with him the same firmament of obligations. This is how we come to *understand* it and accept it that he is a person capable of responsible choices” (SM, 66).

Thus, respect naturally *flows* between those people who acknowledge one another’s human rationality. Such an acknowledgement requires empathically extending one’s own rationality to the other, and this places one person in an I-Thou relation with the other. For, to know another person as rational, one must dwell intimately in the particulars of that person, and, as we have seen, such indwelling implies respect.

Human rationality, for Polanyi, is both the aim of man’s calling, and the means by which people can answer their calling. Hence, “Man’s responsibility to standards of truth and rightness establish him as a rational person” (SM, 90). But this is not the rationality implied in Aristotle’s aphorism “man is the rational animal.” That “rationality” contemplated an Aristotelian conception of detached, logical thought, such as “A is not non-A,” the law of consistency in syllogistic reasoning, etc. Later, in the early days of science, “rationality” became a program of systematic doubt.

For Polanyi, humans can and do use logic, but within the context of a vast “tacit dimension.” This dimension contains indeterminate aspects, such as personal judgment, personal skills, intellectual passions, and hunches and intuitions, which one cannot fully articulate. Within Polanyi’s broader conception of “rationality,” people pursue knowledge that they need not doubt, but which they can *believe in* with universal intent. And, as we have seen, striving for such beliefs necessarily entails respect for others.

Such respect also distinguishes human rationality from the problem solving, practical, means-ends rationality, which is prefigured in animals. Human practical reasoning is not different in kind from that in animals, except that it may be used in abstract thinking, and may be tempered by man’s moral sense. Therefore, distinctively human rationality necessarily involves human respect, and to be “a rational person” is to make decisions, and undertake actions, which manifest such respect.

The foregoing discussion has shown that Polanyi ties the human moral sense to human rationality in many ways. Indeed, for Polanyi, to be *rational* is to be *moral*, just as to be moral is to be rational. This is what is *morphologically right* for humans. It is the ultimate answer to “man’s calling.” In other words, Polanyi is suggesting a non-supernatural, biologically evolved, basis in human nature for the future articulation of moral systems within the idiom of particular times and places. As he says, “modern man’s critical incisiveness must be reconciled with his unlimited moral demands, first of all, on secular grounds.”¹²

Thus, questions as to what is moral can be answered rationally. Both morality and rationality, like matters of fact, are subjects of appraisal. And this is the link to normative social science. For, if, as Polanyi says, “Man’s responsibility to standards of truth and rightness establish him as a rational person,” then the term “rational person” can serve as a standard of appraisal for all human behavior.

B) The Desensitization of Respect

If a Polanyian social science is to claim that respect is a natural predisposition for humans, then it must also explain why there are so many instances of human behavior that seem to show little or no respect between people. Nazis certainly showed no respect for the Jews and others whom they executed.

But evidence of malice need not be interpreted as refuting the claim of natural respect between people. It only shows that the natural respect can be easily overridden by cultural factors. Campaigns of hatred, scapegoating, and persecution are commonplace throughout history. Desensitization to one's natural fellow feeling for others can be taught and learned – for both good and ill. On the good side, medical students must learn to become desensitized to what Polanyi calls the “physical sympathy” naturally occurring at the sight of another person's terrible suffering. Surgeons and their nurses must become desensitized to the sight of surgical operations. Trained as a physician, Polanyi knew that even “experienced doctors may faint or get sick at the sight of a deep incision in the eye of a patient” (PK, 205). Such “physical sympathy” seems to be an expression of a natural compassion, caring, and respect for others, to which one must become desensitized if one is to successfully function in certain social roles. Professional detachment can also be seen in the psychiatrist or physiologist who regards his or her patient as a mechanism so as to help the patient.

Similar training may be required for otherwise ordinary people to be capable of engaging in *evil* actions. Polanyi comments that “the most determined criminals are liable to be effected by physical compassion” (PK, 205). The Nazi, Heinrich Himmler, was the son of a pious, Roman Catholic schoolmaster who had once been tutor to the Bavarian Crown Prince. Before World War II, Himmler was an ordinary fellow who studied agriculture and raised chickens. After becoming the head of Hitler's Gestapo, he decided to test the process of killing Jews. So he ordered that 100 Jews be killed in his presence. Citing historical records, Polanyi relates that Himmler “came near to fainting at the sight” (PK, 205). Polanyi goes on to explain that one of the reasons for adopting the gas chamber method of executions was to reduce the bad feelings *of the executioners* (PK, 206). Ironically, natural compassion seems to have been so ubiquitous among the Germans that the engineers of the death camps felt compassion for the executioners, even as the executioners were unable to fully suppress their natural compassion for their victims!

The very necessity of using cultural methods to thus desensitize people, strongly suggests that the persons so trained originally had a natural compassion that comes with having a natural respect for other members of the human race. Of course, learning can be a two-edge sword. That is, while desensitization of compassion, or physical sympathy, can be learned for good or for ill, as for example from a pathological teacher, so can the refinement of respect be learned.

Polanyi often acknowledged the capacity of humans for learning. He wrote, for instance, that “Although our fundamental propensities are innate, they are vastly modified and enlarged by our upbringing” (PK, 267). Humans can educate their natural desires and emotions, such as “when we control and refashion our appetites in conformity to social custom” (PK, 320). The study of art and music shows the possibility for “the improvement of sensuous discrimination by training” (PK, 319, n. 2).

We read Polanyi's comments on sensitivity refinement, then, as setting the agenda for his normative social science. Indeed, he was quite explicit about this educational function in *The Study of Man*, where he

modeled the method that a normative social science must follow, if it is to be rational. Let us, then, examine that model.

C) Respect in Dramatic History

For Polanyi, “the study of man must start with an appreciation of man in the act of making responsible decisions” (SM, 71). He adds that the “most striking examples of human decisions are recorded by history” (SM, 71). He is especially concerned with those “political actions profoundly affecting the framework of existing power” (SM, 72). Great persons often spearhead these moments. Polanyi refers to the study of their careers as “dramatic history.” Hence, “it is dramatic history that represents the most intimate approach to [understanding] the responsible decisions of man” (SM, 78). Polanyi’s discussion of “dramatic history,” then, is his vehicle for illustrating how a normative social science can proceed.

One “distinctive task” for the historian “is to understand the responsible decisions of historic personages” (SM, 91). This first requires that a decision be appraised as “responsible.” When an historic figure does act responsibly, the main explanation for this action is that he or she has acted naturally as a “rational person;” hence, their actions will have had *reasons*, which other rational persons can agree were *rational*. The historic person can be understood as having answered his or her particular calling to fulfill the elements of human morphological rightness.

When a decision is appraised as not being rational, the historian may then leave to others the task of explaining the *causes* of this aberration from the norm for man. Understanding and explaining the causes of “pathological behavior ... lies outside the historian’s distinctive task” (SM, 91). A neurologist or psychiatrist is better suited to explain the “pathological behavior of a Tiberius or a Hitler” (SM, 91). Thus, when behavior “cannot be understood at all in terms of reasons,” the skills of another profession may be necessary to find the aberrant behavior’s causes.

A quotation given above is worth repeating as an important maxim of a Polanyian social science. That is, “Man’s responsibility to standards of truth and rightness establish him as a rational person” (SM, 90). The historian, then, first looks for the rationality in the behavior of the actor under study. In effect, humans are presumed rational, until proven otherwise. In the very act of identifying behavior as “rational,” the historian is appraising that behavior. Historians must ask several probing questions in the course of their inquiry. These will include asking whether the behavior on record is the sort of behavior that “a rational person” would have engaged in under these circumstances. If that behavior rises to the level of “rational,” the historian may further ask whether it does so only minimally, or brilliantly exceeds the minimum of rationality, or falls along a gradient somewhere in between.

What I call “the rational person standard,” then, is universal in the sense that human nature is universal. But it is not an ethical commandment. It is a descriptive category, in the same sense as a biologist determining when a tadpole has become a frog. The application of this rational person standard requires the personal judgment of the historian. That judgment will have been educated by the historian’s apprenticeship to the traditions of the field. And the field will have been enriched by the great minds that have contributed to it. Although opinions may vary, it is the general agreement of the connoisseurs, or experts, in the field that determines whether the historic person has acted rationally.

All fields of inquiry create their own standards. For example, as Polanyi points out, animal psychologists have developed standards for the appraisal of an animal's behavior as "feeding." This action can be described as correct or mistaken. "Good feeding," then, would be the act of eating nutritious food. But eating some substance with no nutritional value would not be considered a proper act of "feeding," especially if it was poisonous! Sometimes only an expert can tell the difference. For example, an expert might recognize that an animal eating soil is actually ingesting minerals it does not obtain from plants. But an untrained observer might think that the animal had lost its mind (PK, 361 f). Hence, the setting of standards is not an arbitrary process, but based upon experience and reason. In the same way, historians can develop an eye for gradients of rational behavior.

Normative social science, then, must develop standards by which to appraise the rationality of the historic person's behavior. Polanyi has modeled how this is to be done. In *The Study of Man*, he sets out maxims to guide the historian's judgment as to whether, and to what degree, a decision can qualify as that of a rational person. This is his "fourfold classification of deliberate choice" (SM, 77). I will illustrate these principles with examples that are not Polanyi's to highlight some of the difficulties involved in the application of the principles to actual events.

The first category, as I mentioned above, is for those decisions that have been identified as rational. To win the American Revolution, for example, George Washington sometimes paid soldiers out of his own pocket. This was a self-sacrifice he endured for a larger cause. It was rational in a "means-end" sense, because he needed Colonial soldiers to fight the British. But he was not *required* to pay them himself. He could have ordered them, at bayonet point, to fight. Instead, the respect for others that is tacit in normal human reasoning led him to make that personal sacrifice. Rather than callously command, he considerably facilitated the participation of his soldiers.

The next three categories constitute "fallacies" the historian might find in the decisions of historical actors, when the historian is "evaluating historical actions" (SM, 87). The first of these is for decisions that constitute "an error based on an otherwise correct interpretation of experience" (SM, 77, 87).

While Polanyi does not give this example, I will use a current event to illustrate his point. That is, political leaders in the United States knew from past experience that Iraq's Saddam Hussein was a dangerous dictator. He used weapons of mass destruction on his own people. A man who is a danger to his own people may be a danger to the United States; especially since the US recently drove his military out of Kuwait. When purported clues appeared suggesting that Saddam was stockpiling more weapons of mass destruction to use against the US, or its allies in the region, the US military was ordered to engage in a preemptive war. Later, the reasons for the war were found to be in error.

Of course, this matter is controversial. Was the 2003 invasion of Iraq a rational decision? Some historians have suggested that if the responsible decision makers had had more respect for the lives of Iraqis, they would have shown more caution in reaching their conclusions about the reality of the danger facing the US. Other historians do not fault US leadership for its lack of rationality. Just as Churchill said of Neville Chamberlain, timidity at a time like that could cost American lives. In this view, the US government indeed acted quite rationally to protect American lives, given the available information at the time. Notice that respect for human life is an element for both pro and con arguments as to the rationality of the invasion. This matter is currently unresolved. However, as I have suggested, science often proceeds by controversy and history no less so.

The next fallacy of historical actors involves the “rational applications of an unacceptable framework” (SM, 87). For example, Aztecs once thought that their gods required human sacrifices in exchange for good crops and good fortune generally. While this is widely regarded nowadays as an unacceptable framework, historians might attempt to argue plausibly that the Aztecs *rationaly* applied that framework by offering their gods human sacrifices. But this raises the question as to when, if ever, killing other people is “rational.” A good faith and reasonable belief that killing someone was necessary for self-defense may be justifiable, and considered “rational.” But to the extent that “rationality” entails respect for other people, one may question whether any killing of another is “rational.” The case of the Aztecs appears to leave the question unresolved as to whether they acted along the lines of a “gradient” of rationality, as the man who kills in self-defense; or, did they, like Hitler, act pathologically?

The last fallacy is for “pathological actions” (SM, 77, 87). For example, Hitler’s claim that the Jews were responsible for all the economic woes of Germany at the time is an unacceptable framework, based on the facts alone. Numerous bad decisions by German leadership, not the least of which were the choices resulting in World War I, were the causes of Germany’s economic decline. But even if there were Jewish bankers who engaged in unfair lending practices, Hitler’s “final solution” was so far from being a rational application of an unacceptable framework that it was entirely pathological – a complete breakdown of rationality.

Of course, historical actors are not the only ones who may commit fallacies. Historians, too, can think fallaciously. As we have said, for Polanyi, one “distinctive task” for the historian “is to understand the responsible decisions of historic personages” (SM, 91). This “task ... to understand,” of itself, implies standards for rational professional conduct. Polanyi outlines three ways by which these standards may be breached. He calls them the “three types of historical fallacies” (SM, 87).

One is the “rationalist fallacy” (SM, 88). “History may be written by applying our own standards, without allowing for the differences in the historical setting of the acting persons” (SM, 88). This is poor “history” because it avoids the special task of the historian which is *to try* to understand the rationality in the actions of historical actors, who acted in the context of their own time. This is a fallacy because it lacks any effort at empathic indwelling. In short, such lazy “Monday morning quarter-backing,” with the benefit of “20/20 hindsight,” does not make good history writing.

“Historicism” is a second fallacy. Polanyi calls this “an extreme ... relativism.” It simply judges “past action by the standards of their own time” (SM, 88). This is unacceptable because one of the historian’s responsibilities is to appraise the “rationality” of the actor’s decisions. To uncritically accept all decisions as rational amounts to an abdication of the professional responsibility *to try* to understand the rationality in the actions of historical actors. While Polanyi does not use the term, historicism seems to be another type of intellectual laziness. As Polanyi observes, all normal people, including historical actors and historians, have some mental ability for formulating their own opinions as to what is true and right, and their calling is to exercise that natural capacity. Also, responsible action may sometimes have to rise above convention in order to qualify as rational. One of the historian’s tasks is to recognize such moments.

Third is “the determinist fallacy” (SM, 88). Here, all moral responsibility is effaced, and “all actions appear determined by impulses of power and profit” (SM, 88). This is a complete abdication of the historian’s task to try to understand the rationality of human behavior. Human behavior is merely clockwork. Thus, human

agency and rationality are mutilated in the process of making mechanistic explanations of historical actions, and otherwise sane people are made to appear insane by their one-dimensionality.

Each of these three fallacies fails to apply Polanyi's method of empathic indwelling. However, Polanyi advises historians that a "balanced respect for man avoids all three fallacies" (SM, 89). The rationalist fallacy can be avoided "by admitting the indispensable biological and cultural rootedness of all free actions" (SM, 89). Every rational person must act through the medium of his or her body, and times. A people can act in a rational manner, even though their actions might not conform to the ideals of a much later culture. While Polanyi does not use this example, consider the "democracy" of the Ancient Athenians. It was dependent upon slave labor to give the citizens time to participate. Clearly, this political system lacked a full measure of respect for mankind. However, the Greeks surely acted along some substantial "gradient" of rationality in shaping their system of self-government. For modern folks to deny that the Greek system qualified as "rational," because it rested upon slavery, would be to commit the "rationalist fallacy."

The relativist fallacy is avoided "by acknowledging that each man has some measure of direct access to the standards of truth and rightness" (SM, 89). In other words, every sane person has the capacity, based on his or her natural respect for others, to judge whether current policies or practices rise to the level of rationality. Making such judgments is man's calling. In this sense, a rational person can reasonably be held to a standard that transcends his own time. To deny this human calling and capacity, and simply judge actions by the standards of their time is to commit the "relativist fallacy." And, of course, the "determinist fallacy" is avoided simply by acknowledging the agency, resourcefulness, and responsibility of the human mind.

Polanyi only offers some limited examples of the application of his historical method. He comments that a "correct judicial decision is an action that can be explained by its reasons" (SM, 91). It is well known in the practice of law that reasonable minds can disagree. In such cases, each side can acknowledge the rationality of the other. But if a judge has some neurological disorder, or perhaps even indigestion, the gradient of rationality in his decision may be diminished. And where there is a clear miscarriage of justice, one can look for its causes. These may include a severe mental disorder, or a succumbing to a "degrading temptation," such as racism or corruption.

Polanyi engages in a critical application of the rational person standard when he turns his attention to Napoleon. When historians study a great person's career, they may do so with "reverence" (SM, 96) for the actor's genius. "Historians are," however, "concerned predominantly with the moral and political greatness or shortcomings of historic personages" (SM, 87). Responsible historians, then, will not simply admire all that Napoleon has done, but will ask whether Napoleon acted as a rational person would have acted under the circumstances.

One of the questions that Polanyi confronts Napoleon's behavior with is, "how far Napoleon was responsible for the wars waged by France under his leadership" (SM, 78). One must also inquire as to Napoleon's reasons for his actions, and appraise their rationality. Also, "to appreciate Napoleon's motives you must put yourself in his position and re-live his thoughts" (SM, 79). Of course, "the result of such indwelling will depend to some extent on the person who enters on the indwelling" (SM, 79). Each historian has to exercise his or her "own moral and political judgment in respect of these subjects" (SM, 87). Studies of the writings on Napoleon show that historians who write with feelings "of national pride or anti-clericalism favor Napoleon, while anti-

militarism and religious feelings speak against him” (SM, 79). In this sense, unlike in the natural sciences, “the writing of history is itself a process of history” (SM, 79).

Characteristically, Polanyi is not shy about expressing his personal judgments about Napoleon and the historians who praise him. Polanyi is contemptuous of the “admiring historian” who “studies Napoleon as his disciple” (SM, 205). Their error is a type of “historicism.” Rather than thinking for himself, that kind of historian “participates, in fact, in a cult” (SM, 95, cf. 98). These historians irrationally raise “Napoleon’s figure” to that of “an ideal of ruthless greatness” (SM, 95). This image has inspired numerous anti-heroes in “Continental literature.” Nietzsche irrationally portrayed Napoleon as “the embodiment of the noble ideal of uniting the brutish with the more than human. From Nietzsche the cult passed on to our own days, right down to the frown of Mussolini and the forelock of Hitler” (SM, 96). While reverence is an appropriate feeling for greatness, such “an admirer may be mistaken in his choice of a hero” (SM, 96).

Polanyi does not offer a systematic evaluation of Napoleon’s career. His use of such terms as “ruthless,” “brutish,” and “cult,” and his mention of Mussolini and Hitler, clearly suggests that Polanyi sees Napoleon as having failed to measure up as a “rational person.” However, Polanyi does not reach the finer points of assessing whether Napoleon acted upon an error in the application of a reasonable set of beliefs; or, a correct application of an unreasonable set of beliefs; or, was moved by a pathological personal ambition.¹³ Such an intricate analysis, however, was not his purpose in *The Study of Man*. His main point in that little book was to show the means by which historians can lead the way in the formulation of reason-based moral standards. And this he did well.

Conclusion

As mentioned earlier in this essay, the study of human morphogenesis in evolution (i.e., “anthropogenesis”) leads to the comprehension of man’s morphological rightness, as determined by our specie’s morphogenetic field. This field operates in human consciousness as man’s calling. Since man’s calling is to strive to be rational, every actor’s behavior constitutes an *achievement*, which can be described along a gradient of “rationality.” Therefore, how well man fulfills his biological form is, at least in principle, measurable.

Man’s calling — to use his powers of reason to find beliefs, which he can hold with universal intent — governs all of man’s intellectual endeavors, including science and morality. Polanyi states that in his discussion of morality, he has not crossed “the frontier which is said to separate sharply the knowledge of facts from the appreciation of values” (SM, 37). Scientific judgments are based on the appraisal of factual claims, and moral judgments are based on the appraisal of the *rationality* of actions. Hence, “our powers of understanding control equally both these domains.”¹² In science, claims to know, made with universal intent, imply respect for other persons. The judgments of morality are based on the very same respect for others.

Polanyi humanistically envisions “man himself as the seat of all knowledge; and . . . man as the source of moral judgment and of all other cultural judgments” (SM, x). But Polanyi is no moral relativist. Man’s personhood, which includes his calling, provides the premise of natural human respect to guide both the formulation, and appraisal, of moral principles.

Although our calling is rooted in our biological embodiment, Polanyi notes that the “distinctive qualities of man are developed by education” (SM, 59-60). Hence, man’s moral sense can be educated. One means of moral

education is to find heroes, or great persons, to emulate. Thus, in dramatic history, “the study of man is definitely transformed into a process of self-education” (SM, 98). Polanyi emphasizes “how independent we are” in our freedom to choose whom to admire and emulate (SM, 97). But such freedom comes with a heavy responsibility. Polanyi warns of “how hazardously self-reliant” we are in making our choices (SM, 98). By choosing the persons whom we will revere as “great,” we apprentice ourselves to their instruction. They become examples for us of right action in the pursuit of our common calling to be rational.

As noted above, for Polanyi an “admirer may be mistaken in his choice of a hero” (SM, 96). As if to underscore the lesson here, he adds, “I have purposely chosen as my example the figure of Napoleon to remind us that this process of education may amount to a corruption” (SM, 97). His point seems to be that if warlord-like “ruthless” and “brutish” persons are to be the ideal we hold with universal intent, then the human race itself is put in danger. Polanyi understood that we live in a Nuclear Age. This makes it all the more urgent for humanity to realize that “even to contemplate actions which may lead to the extinction of humanity . . . is sacrilege” (SM, 69). Such is Polanyi’s respect for humanity.

Polanyi reminds his readers that teachers, especially in universities, “are today the chief transmitters and interpreters of the heritage which defines the duties of men and sets up the standards that society must respect” (SM, 99). Human self-respect, then, obliges universities “to teach young people, and among them our future leaders, the basic truths to the service of which a free society is dedicated” (SM, 99). Chief among these truths is that political power must be sufficiently limited to enable individuals to seek the beliefs they can responsibly hold with universal intent.

Endnotes

¹ Michael Polanyi. *Personal Knowledge: Towards A Post-Critical Philosophy*. (Harper Torchbooks, NY, 1964), 6, hereafter “PK.” This paper will focus on Polanyi’s efforts to create his own vision of the social sciences as a means of making sense of the human social experience. A comparison of his views to other writers on social science, for reasons of economy, must be deferred.

² Michael Polanyi. *The Study of Man*. (The University of Chicago Press, 1959), 37, hereafter “SM.”

³ <http://plato.stanford.edu/entries/feyerabend/>

⁴ *Personal Knowledge*, 72, 364, 369-373 passim. Polanyi’s characterizations of social science as “positivistic” and “behaviorist” do not, of course, do justice to the vast range of social science views in the first half of the twentieth century, when he was writing. Polanyi was likely aware that other views of social science existed, particularly various Marxist writers who had their own takes on normative social science. Some Marxists were overtly humanistic, while others covertly indulged in the “moral inversion” that Polanyi criticized. However, Polanyi seems to regard his characterizations as apt for the *prevailing* model of social science in Britain and the US at the time of his writing. This model, most visible in Skinner’s writings, centered on a mechanistic image of both human and animal mental processes, and pretended, in a self-deceiving way, to be “objective” and “value-free.” It is this model for which he seeks to establish an alternative. (Also, see his discussion of historiography at SM, 100–102.)

⁵ Michael Polanyi. *The Tacit Dimension*. (Anchor Books, NY, 1967), page 16, hereinafter “TD.”

⁶ This quotation comes from Polanyi’s letter to Raymond Aron, 28 March 1961, Box 6, Folder 1, Polanyi Papers, Department of Special Collection, University of Chicago Library. Thanks to Phil Mullins for pointing out this letter.

⁷Avon Books, NY 1978.

⁸In Franz De Waal, *Good Natured* (Harvard University Press, Cambridge, 1996).

⁹ *Personal Knowledge*, Preface to the Torchbook Edition, page x.

¹⁰ Polanyi's theory of emergence in evolution is unique, and quite controversial. After the emergence of life, every existing organism was then a form of living matter; or, an instance of material life embodying a mental component. Both individual and species contain the potential needed for a novel form of life to emerge. In sexual reproduction, two individuals can reproduce a unique individual, new to the world. On a larger scale, a new species can emerge from its prior species. The potential for a novel form can be spontaneously and creatively realized. While the necessary material conditions must be present, the thrust behind the creative leap into the new form is a result of the vital character of living matter, and not a mechanistic "cause." The intentional structure of material life, its vital thrust, for Polanyi, is to strive towards an intensification of meaning. Humanity is currently at the top of the hierarchy of life forms precisely because meaning is most intense in us.

As I have suggested, Polanyi seems to understand the natural predisposition of humans to respect one another as an emergent and distinguishing property of human personhood, or nature. Prior to its realization, the potential for this predisposition came from a series of incremental creative leaps in evolution, which resulted in a new species with these novel characteristics. In this essay I have suggested that the first instance of this new species likely emerged when hominids and primates broke from their common ancestor, several million years ago. Socially shaped breeding practices probably intensified the development of this natural predisposition.

Polanyi regards his theory of emergence, resulting from a creative leap, as meriting the status of "scientific knowledge." The unpredictability of such creativity is a major part in the indeterminacy of scientific knowledge, as Polanyi understands that knowledge. The indeterminacy of creativity in organic life, plus its "vitalism," distinguishes Polanyi's theory of evolutionary emergence from those theories with a more positivistic bent. These uncertainties also challenge the capacity of knowers for self-reliance upon their judgment as to what is true. Cf. PK, 265, 317 f.

¹¹ PK, 348. While reminiscent of Buber, Polanyi does not cite him in *Personal Knowledge*.

¹² TD, 62. However, at the very end of the same essay he uncharacteristically hedged a bit on that point: "Perhaps this problem cannot be resolved on secular grounds alone" (TD, 92). Here, he seems to be leaving the door open for secularism to team up with religion in the effort to articulate morality.

¹³ In his last book, *Meaning* (University of Chicago Press, 1975), published posthumously, Polanyi observes that ambition is "a nonmoral principle" that can be "harnessed for a moral end" such as in the process of scientific discovery (196). Or, it can operate as a private obsession, "banishing the moral meanings altogether from one's vision" (209).

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 (masini@etsu.edu) and someone will see that you are added to the list.

Polanyi in the Face of Transhumanism

R. P. Doede

ABSTRACT Key Words: Michael Polanyi, Hans Moravec, Nick Bostrom, Ray Kurzweil, Transhumanism, Marxism, technological singularity, posthuman, cyborg, nanotechnology, Laplacean mind, tacit dimension, technological determinism, mind-downloading, embodiment.

This essay gives a brief overview of Transhumanism and explores a few of its central ideas in the light of Polanyi's views about embodiment, Marxism, and reality's hierarchal order, concluding that although Polanyi would likely appreciate the possibilities of cyborgic augmentation that feature in the Transhumanist route to the posthuman, he would utterly repudiate its metaphysics of disembodied intelligence and its underlying technological determinism.

Transhumanism (hereafter TH, an abbreviation also used for transhumanist) is a rather grand and ambitious enterprise, one arising from some common assumptions about the nature of the human mind and its capacities, and from some not so common assumptions about the status and destiny of humanity. TH is a very recent outlook whose arrival on the international scene came a decade after Polanyi's death, although its ideological roots extend as far back as recorded history. TH has attracted a following that every year is growing significantly in numbers and in diversity.¹ Thus, on the occasion of the fiftieth anniversary of the publication of Polanyi's *Personal Knowledge* (henceforth, PK), I thought it a good time to ask "Given the ideas expressed in PK, what would Polanyi have thought of this movement?" The task I set myself for this paper is to bring pertinent ideas found in Polanyi's writings, and in particular his PK, to bear on the prospects of TH aspirations.

Although its popularity is growing spectacularly and some of the assumptions underwriting it are culturally pervasive, I think the movement itself, let alone its defining commitments, are not common knowledge. Before I explore Polanyi's writings for some orientation in and direction regarding the TH vision, I will offer an introduction to its most notable tenets, using a few of the more popular TH views as representative of the fundamental claims around which a variety of self-ascribed THs gather.² Next I will set TH in its contemporary context of contestation. When I turn to Polanyi, I will first address the issue of the TH vision's feasibility from a Polanyian perspective, and I will conclude by identifying where Polanyi would likely be highly apprehensive of TH ideological commitments.

TH is an interdisciplinary movement arising from the prospects of some fairly recent technological developments in various disciplinary sectors, e.g., nanotechnology, biogenetics, information technology, and cognitive science that are converging in an ever accelerating relationship of mutual reinforcement towards capacities of human modification. However, lest you get the immediate impression that the ideas I discuss as comprising the TH outlook are so "way out there" that nobody in his or her right mind would entertain them seriously, let me quickly dispel this impression by merely mentioning a few of the outstanding advocates of the TH agenda and their academic/professional qualifications. As you will see, some of the most vocal advocates of this doctrine are widely known and deeply respected scientists and academicians. Included in the broad definition of TH I'm working with here are Marvin Minsky, Toshiba Professor of Media Arts and Sciences, Professor of Electrical Engineering and Computer Science at MIT, and author of nine books, including the highly acclaimed *Society of Mind* (Simon and Schuster); Hans Moravec, Director of the Mobile Robot Laboratory of

Carnegie Mellon University, the largest robotics lab in the country and author of *Mind Children: The Future of Robot and Human Intelligence* (Harvard) and *Robot: Mere Machine to Transcendent Mind* (Oxford); Nick Bostrom, a philosophy professor at Oxford and Director of Oxford's Institute for the Future of Humanity; Ray Kurzweil, world renown inventor of numerous AI technologies, member of the US Patent Office's National Inventors Hall of Fame, and author of *The Age of Intelligent Machines* (MIT) and *The Age of Spiritual Machines* (Viking); Lee M. Silver, a professor at Princeton in the Department of Molecular Biology, and author of *Challenging Nature: The Clash of Biotechnology and Spirituality* (Harper) and *Remaking Eden* (Ecco); Frank Tipler, Professor of Mathematics, Tulane University, and author of *The Physics of Immortality* (Doubleday)—to name just a few of its more prominent exponents.

TH is a truly postmodern phenomenon bringing together science and sci-fi and some of the most serious and respected scientists, philosophers, sociologists, technologists, and futurologists as well as some of the most eccentric and academically suspicious individuals imaginable,³ all of whom are united by their confident conviction that the days of human being are numbered and an almost giddy enthusiasm for doing whatever they can to speed the final day's arrival.

Aims of Transhumanism: Transhumanism is an appropriate appellation for the movement I'm discussing because to this way of thinking, humans are a *transitional* form of a species intent on *transcending* itself—we are a species on the way to a new and yet unimaginable posthuman form of intelligent life.

The cognitive, emotional, perceptual and kinematic capacities of humans are strictly limited by their biological underpinnings. THs recognize that the traditional means of overcoming these limitations in efforts to improve human nature through, for example, education and social-ethical-cultural refinement, are insufficient to bring humans enough control over their lives to live truly happy and satisfying lives. THs refuse however to accept these limitations and failures as fate. They rail against the biological limitations that their flesh inflicts, rejecting the notion that they are destined to have desires whose satisfactions are beyond the immediate control of their wills.⁴ They argue that we possess *today* the techniques and technologies of psychopharmacology, genetic engineering, neurosurgery, and nano-machinery implantation to alter the flesh's exigencies and to meld bytes and bodies, that by harnessing this convergence of technological capacity, humans can begin to re-invent their own natures, fashioning them to conduce more readily to their own ideals and conceptions of well-being. In other words, THs believe we can technologically engineer ourselves into states of being that old-fashioned "low-tech" humanistic approaches of self-discipline, hard-work, and patience aimed at but could never really deliver. However, the THs aren't merely pursuing technologically mediated states of well-being; they have their eyes set on an array of possible forms of cybernetic immortality.

The ultimate aim of TH is to eliminate aging, illnesses, unsatisfied desires, and death. However, some THs acknowledge that they will die before technology is available to keep them from dying. The more optimistic THs, someone like Ray Kurzweil for example, believe that so long as they can keep themselves healthy for another few decades,⁵ until the Singularity erupts, they will never have to die. (I will explain the Singularity in a moment). Among the THs, there are two popular ways of envisioning the realization of techno-immortality, both of which are underwritten by their informational metaphysical materialism,⁶ i.e., their conviction that essences are information patterns that can be reproduced digitally without remainder.⁷ The most radical and speculative vision of immortality involves having one's mind uploaded into a super-computer where one could live either in virtual worlds of one's own choosing or in the physical world by controlling a robot proxy.⁸ The more immediately realistic vision requires progressive cyborgic augmentation that replaces vulnerable flesh, in manageable steps,

with durable and non-biodegradable materials. Moravec points out that the protein and the neurons of which humans are presently composed aren't ideal materials because they are stable only in very narrow temperature and pressure ranges, they are very sensitive to radiation, and neurons switch less than a thousand times per second lagging far behind even today's computer components that switch at a rate of billions-per-second.⁹

Assumptions of Transhumanism: The fundamental assumption that underwrites the project of TH is that humans are not the end of evolutionary development but a transitional form in its modus operandi, a transitional form leading from carbon-based life forms to a new form of life, a successor species whose substrate may well be primarily silicon.¹⁰ Human nature is "a work-in-progress, a half-baked beginning that we can learn to remold in desirable ways," says Nick Bostrom.¹¹ TH seeks to bring about a transition where the genetic lottery created by the "Blind Watchmaker's" fumbling with forces of chance and necessity is replaced with the intelligent and intentional designs engineered by some of the brightest minds that evolution has thus far been able to produce.¹²

So as the age of the human is drawing to a close, THs eagerly anticipate that their descendants will be posthuman, beings whose capacities will so far exceed those of humans today that they will look back upon us as we now view our mono-cellular ancestors.¹³ Apparently, as N. Katherine Hayles observes, "Humans can either go gently into that good night, joining the dinosaurs as a species that once ruled the earth but is now obsolete, or hang on for a while longer by becoming machines themselves."¹⁴

Another central assumption of TH is that the future is gaining speed everyday, owing to the accelerating nature of technological progress. This assumption is fundamental to their rather utopian aspirations, and derives from their expectation of what has been dubbed "the technological singularity:" the view that there looms on the horizon an explosion of technological advancement. In 1965, Gordon Moore formulated his now famous "Moore's law:" the observation that the number of transistors that we can make to fit on a chip increases in a nonlinear fashion over time.¹⁵ Recently, Ray Kurzweil has demonstrated that chip speed, cost-effectiveness, and miniaturation also exhibit similar growth rates.¹⁶ I. J. Good, in 1965, first clearly articulated the singularity thesis as the intelligence explosion that will take place when humans can hand over to intelligent machines the task of designing intelligent machines. Good claims "the first ultraintelligent machine is the last invention that man need ever make"¹⁷ because "shortly after, the human era will be ended."¹⁸ Kurzweil explains:

[W]e won't experience 100 years of progress in the 21st century—it will be more like 20,000 years of progress (at today's rate)... Within a few decades, machine intelligence will surpass human intelligence, leading to technological change so rapid and profound it represents a rupture in the fabric of human history.¹⁹

Here it is sobering to recognize that today the computers in our fifty-dollar cell phones are a thousand times more powerful than all the computation shared by all the students and faculty at MIT when Kurzweil attended there in the late 1960s, and this at a billion-fold price performance.

Two of the technologies that THs predict will move us into the singularity launch are nanotechnology in the form of molecular manufacturing and brain-machine interface (BMI) technologies in the form of intelligence uploading. Nanotech is big business today, with research funding from the US alone amounting to several billions of dollars (the governments of China and Moscow have recognized the tremendous military potential of this technology and are also investing billions).²⁰ Nanotechnology is the technological manipulation of matter at the nanoscale (one-billionth of a meter). Molecular manufacturing is the brain-child Eric Drexler who argues that we

can harness the molecular machinery of cells to manufacture both biological and non-biological commodities. After all, if everything is just various arrangements of atoms, then, with molecular assembler nanotechnology we can, in principle, engineer DNA to build anything whatsoever from the ground (i.e., atoms) up.²¹ As was demonstrated in 1989 when IBM, using their scanning-probe microscope, spelled their logo “IBM” on a nickel surface with 35 precisely placed atoms of xenon, we already have the technology for moving with absolute precision one molecule at a time. Molecular manufacturing will enable us, in the words of Bostrom “to transform ... sand into supercomputers, ... help us abolish most diseases and aging, ... and—more ominously—lead to the rapid creation of vast arsenals of lethal or non-lethal weapons.”²²

BMI technologies are with us today—we have electronic prosthetics that make direct connections with human nerves²³—but the hypothetical technology needed to upload a human mind to a computer is still only a twinkle in the TH’s eye. This hasn’t, however, prevented the THs from speculating on technological innovations that would realize their dream of immortal software bodies.²⁴ Successful mind uploading would result, according to Bostrom “in the original mind, with memory and personality intact, being transferred to the computer where it would then exist as software; and it could either inhabit a robot body or live in virtual reality.”²⁵

This leads us to the final key assumption of the THs, one upon which uploading intelligence crucially depends, namely that information patterns, not our biology, constitute our essences, rendering our body merely a temporary expendable prosthesis. Couple the stupendous advancement and power of information technologies with TH eschatologies of immortality, and it is not surprising that they privilege the abstract, heartily embracing information as the primary Real, and minimize the significance of material instantiation, viewing matter as “derivative manifestation” as Hayles puts it.²⁶ “In the beginning was Information” claim the THs: abstract pattern trumps concrete material presence delivering “a construction of immateriality that depends not on spirituality or even consciousness but only on information.”²⁷ Michael Heims captures his updated Platonism as “the dream of perfect FORMS” becoming “the dream of inFORMation.”²⁸

The assumption of “pattern-identity”²⁹ underwrites THs aspirations of mind uploading. Pattern-identity defines the essence of a person as the pattern and the process going on in one’s central nervous system, completely divorcing personal identity from the material supporting the pattern and process. Thus says Moravec, “If the process is preserved, I am preserved. The rest is mere jelly.”³⁰

Clearly the assumptions of TH minimize, if not utterly erase, the differences between human intelligence rooted in and enacted through bodily being and computer intelligence, making conceptually plausible their posthuman aim of seamlessly blending humans into intelligent machines, and laying the ideological framework wherein humans confidently regard their bodies as mere fashion accessories rather than the ground of their being.³¹

Contemporary Responses to Transhumanism

The extreme and rather boring reactions to Transhumanism can be slotted into the categories of techophile and technophobe reactions. The technophiles embrace TH as an undeniable inevitability of human technological progress and tend to enthusiastic confidence regarding the use of species modifying technologies and the unpredictable consequences of those technologies, certain that should anything unseemly erupt, there will always be a technological fix in the offing. The technophobes with equal enthusiasm reject TH visions of

digital futures, certain that these are either the wiles of the devil or the lunatic ravings of individuals deeply alienated from the world of nature and human community.³²

The really interesting responses are from those who seek some form of balance, recognizing the impinging forces that create tensions in both directions. Here I will mention two such positions: the bioconservative position, which isn't technophobic but whose counsel is mostly cautionary, and the techno-progressive position, which isn't techophilic but whose counsel is mostly prudentially pragmatic. Both of these moderating positions part ways over their respective understandings of human nature. The bioconservatives like Leon Kass, Francis Fukuyama, and Bill McKibben argue that human nature is normative, that once we begin designing it we have unhinged ourselves from the domain where social equality and justice apply and have entered the economic register of commodity production and exchange, leaving us in a moral freefall where only necessitarian natural forces or raw human powers can impose societal order.³³ On the techno-progressive side we find people like Andy Clark and Kathleen Hayles. Neither of them accepts the inviolability of human nature and both of them believe that if there is anything that comes close to human nature it is the quest to transcend native limitations through symbiotic and augmentative relations with technologies. What's constant across this divide of bio-conservative and techno-progressive is the preservation and centrality of the body in the future cultural and biological evolution of the human form of life.

Polanyi vis-a-vis Transhumanism

Re-reading Polanyi's PK in light of the TH movement makes apparent that he would have been deeply interested in the movement, for how it construes knowledge and human identity, how it positions science and technology in society, and for what it signals about our western culture. Before I identify Polanyian problems with the TH enterprise, I will first merely mention an aspect of Polanyi's outlook that bears kinship to some TH thinking about knowledge and human identity.

Within the TH camp there is a clear parting of ways between those extreme THs who seek a post-biological embodiment through porting into and uploading their minds into the silicon-based signifiers of virtual worlds, and those more moderate THs who are not tempted toward the prospects of surrendering their fleshly embodiment to the demands of pure digitality, yet who nonetheless welcome technologies that augment and amplify human potentialities.³⁴ Given how Polanyi views mind, body, and tools as being on very intimate terms with each other, I think we might find possibilities of Polanyian sympathies for the more moderate and less discarnate version of the posthuman.

Polanyi, in his 1961 essay "Faith and Reason," published just a few years after *Personal Knowledge*, makes the rather provocative claim that "[I]ittle of our mind lives in our natural body."³⁵ This, of course, opens the door for a symbiotic dovetailing of human intelligence with external technologies through what Polanyi calls "indwelling." He depicts theories and all symbolic formalisms as tools, one might even say, *technologies* of the mind, that have been created by our inarticulate selves groping toward hidden yet surmised realities for the purpose of relying on them as our external guides³⁶—this is the Pygmalion in man [PK 5, 104]. He speaks of how we existentially pour ourselves into and thereby assimilate these technologies as parts of our own existence, experientially transforming them into extensions of ourselves [PK 60-61], and in *The Study of Man* (a book he wrote just after *Personal Knowledge* but which Polanyi suggests could be read as an introduction to *Personal Knowledge*), he asserts that "[e]very time we assimilate a tool to our body our identity undergoes some change;

our person expands into new modes of being” (SM 31, emphasis mine).³⁷ Surely Polanyi was here anticipating, perhaps unwittingly, the potential for cyborgic augmentation that THs construe as an essential step in the direction of a posthuman future. As information technologies become more and more capable of accomplishing tasks that our native intelligences have left us poorly equipped to perform quickly and accurately, we will naturally extend our embodied intentionality into the world through these technological artifacts, thereby cyborgically extending our bodily synthesis into higher levels of knowing and being. I think this is as far as Polanyi would walk down the TH path, but even this might be pushing things.

There are some pretty clear and central commitments in Polanyi’s *Personal Knowledge* that would seem to place fundamental limits on how far Polanyi would be willing to go with the TH project and that mark his radical departure from TH aspirations predicated on the metaphysics of disembodiment. Here I must limit myself to comments on only four of these commitments: 1) his commitment to the unique and essential role of the human body which leads him to reject any account of human being that fails to recognize the pervasive and ineliminable place of the tacit dimension, 2) his commitment to the human capacity to make contact with reality through strenuous mental efforts which leads him to repudiate epiphenomenal reductions of human agency in the world, 3) his commitment to the autonomy of pure science which leads him to condemn any approach to science that reduces it to technique/technology or allows its research to be dictated by utilitarian concerns for material welfare, and finally 4) his commitment to an hierarchical emergent ontology which leads him to be highly apprehensive towards revolutionary programs of social and moral transformation. My comments will focus on the first of these commitments because the other three are to some degree logical consequences of it.

Today our culture as a whole has slipped comfortably into a condition of virtuality in that we find it natural to conceive of any and everything as ultimately nothing more than informational patterns.³⁸ Ever since the rise of modern science in the 16th and 17th centuries we began, as much as possible, bringing our own thinking into conformity with the explicit algorithmic operations we discerned in the world machine. And ever since the cybernetic revolution of the 40s and 50s we have sought to bring our information processing technologies as much as possible into conformity with the workings of the human mind. The net result of this mutuality has been a rather subtle yet stupendously influential cross-pollination between mind and machine, producing the disquieting state of affairs observed by Donna Haraway: “Our machines are disturbingly lively, and we ourselves frighteningly inert.”³⁹ It seems that we have become victims of our own metaphors: we are inside them and they have gotten inside us. Through tacit supplementation (about which more later), we have projected onto mere computational transformations of our intelligence and, through objectivist epistemic ideals, we have reduced our intelligence to mere computational transformations. This is nowhere more apparent than in contemporary philosophy of mind where the notion that “the mind is to body as software is to hardware” invites the reduction of the person to mind, to intelligence, to cognition, and cognition, as the functionalist mantra goes, is but a sub-species of computation: informational pattern prevails over *real* presence.⁴⁰

Throughout *Personal Knowledge*, Polanyi repudiates as misleading and culturally minatory any metaphor that would lead us to assume we could do without our biology or flesh because *when the body goes the tacit dimension necessarily follows*: without body, no tacit dimension, and without the tacit dimension, the lifeworld dissolves.⁴¹ As even a cursory reading of Polanyi’s criticisms of the modern quest for a totally explicit knowledge of mind, beliefs, or life shows, he would have nothing but contempt for this pronounced cultural tendency that has become orthodoxy for a significant sector of THs, conveniently providing them with an almost self-evident basis for their metaphysics of disembodiment. For Polanyi however, the mute intelligence of the flesh that has developed over eons of evolutionary shifting and sifting of protein-based forms of life is the fundamental

and primordial matrix out of which the tacit dimension of human aspiration has arisen. The human body has a long history of encounters with reality woven deeply into its tissues, drives, and intentions that tacitly fund with meaning whatever tools it relies upon or indwells to extend further its reach into the real.⁴²

From Polanyi's perspective, the TH project of porting into a super-computer and uploading minds would require translating all the tacit wisdom of the flesh into explicit data-structures, binary code's 1s and 0s, before it could be transferred to the signifiers of its new silicon-based embodiment. This uploading would therefore require the wholesale erasure of the tacit dimension as the unspecifiable and indeterminate focal ignorance that opens human intentionality to the subtle subsidiary suasions of yet hidden meanings and realities. Quite simply, *the tacit dimension doesn't compute*. Consequently, without the tacit dimension, the resources for traditional wisdom, genuine creativity, and for the interpellations of value and the demands of norms upon which personhood and the very practice of science itself depend would be eliminated from the algorithmic explicit digitations of our newly embodied data-doubles.

Here I turn to Polanyi's whipping boy, what we might call the "Laplacean tacit dimensionless Mind," to demonstrate how the THs have subtly construed post-human being in the image of this Mind. In essence, the Laplacean Mind is nothing other than an eminently powerful ghost in Descartes' machine, although this ghost is no longer *res cogitans*, but *information*. The Laplacean Mind is a virtual machine that generates inferences about future and past configurations of matter by using the laws of physics as its algorithms, and using an atomic topography as its array of symbols representing initial conditions [PK 140ff]. This Mind, according to Polanyi, would know precisely nothing of interest to anyone because it would merely mechanically compute over an objective symbol domain of entirely explicit and formal data-structures. Bearing no body of passions, needs, vulnerabilities, potentialities, or sensory *Gestalten*, to tacitly inform its intentionality, this Mind would "pay equal attention to portions of equal mass" which means that "not in a thousand million lifetimes would the turn come to give man even a second's notice" [PK 3]. Unlike intelligent human minds, the Laplacean Mind just would *not* give a damn about anything, including human beings or whether its own computations are correct.⁴³

So why are THs, and others enthralled by the objectivity the computational paradigm offers, still taken seriously when they make claims like human minds and human knowledge are ultimately highly complex structures of information that are up-loadable into the purely notational world of virtual reality? Here, I think, would be Polanyi's response:

That such virtually meaningless information was identified by Laplace with knowledge of all things past and all things to come, and that the stark absurdity of this claim has not been obvious to succeeding generations since his day, can be accounted for only by a hidden assumption by which *this information was tacitly supplemented*. It was taken for granted that the Laplacean mind would not stop short at the list of p's and q's at the time t, but proceed by virtue of its unlimited powers of computation to evaluate from this list the events, and indeed all the events, that we might be interested to know [PK 140, emphasis mine].

As Polanyi details the subtle dynamics of "tacit supplementation" and the "pseudo-substitution"⁴⁴ that enable this unrecognized changing of subject, he deploys the rhetoric of magic to account for the "spell" that our culture has succumbed to, being taken in by a "decisive sleight of hand" [141] through which the algorithmic operations on explicit atomic data-structures are tacitly supplemented with human meanings and then represented as human knowledge. However, once we see through this conjuring trick whereby meaningless information is tacitly draped

with human significances, Polanyi is confident that we will “immediately see that the Laplacean mind understands precisely nothing and that whatever it knows means precisely nothing” [PK 141]. The Laplacean Mind, the conception of which underwrites both the extreme epistemic ideals of modernity and TH metaphysics of disembodiment, presents us with an image of intelligence in which we cannot recognize ourselves: it has “denature[d] the vital facts of our existence” [PK 141], presenting “us with a picture of the universe in which we ourselves are absent” [PK 142].

However, since science itself is a human enterprise, and the Laplacean ideal erases human beings from the picture of the world constructed according to its constraints, Polanyi exploits this Laplacean fallacy to suggest a criterion of consistency: “our conception of man and human society must be such as to account for man’s faculty in forming these conceptions” [PK 142]. The only reason TH can enthusiastically embrace this flagrantly inadequate account of human knowing and being is due ironically “to the fact that [they] automatically supplement [this account] by [their own] tacit knowledge” [PK 169] of these realities.

I turn now to the last three commitments mentioned above, which deal mostly with the problematic social consequences of the TH project. The fact that TH and Marxism bear some striking similarities helps me be brief here.

Polanyi condemned Marxism for rejecting the obligation to “cultivate thought according to its inherent standards” and for subordinating all thought to the forces of economic welfare, refusing to recognize that thought bore independent and intrinsic powers of its own [PK 213]. This reduction of thought’s powers to reach reality and its agency to change reality, Polanyi identified as a decisive step of revolutionary movements in the direction of totalitarianism.⁴⁵ Marxism, having embraced the vision of reality bequeathed by the Laplacean Mind which utterly epiphenomenalizes human intellectual agency, enacted the compatibilist paradox⁴⁶ by inviting all who suffer under the systemic injustices of capitalism to recognize and join the deterministic material forces that historically necessitate the inevitable victory of the proletariat. THs also embrace the vision of reality bequeathed by the Laplacean Mind and its consequent epiphenomenalizing of human thought. But for the TH, the real movers of history are not on economic forces, but technological forces leading to the inevitability of the technological singularity. And they too enact the compatibilist paradox by inviting all who suffer under the limitations of the flesh to recognize and support the deterministic *technological* forces that historically necessitate the arrival of the posthuman. The dismissal of the autonomy and agency of human thought is common to both Marxism and TH, and, as anyone knows who’s read PK, Polanyi was convinced that this disenchanting of the human intellect and undermining of the “voice by which man commands himself to satisfy his intellectual standards” leads socially to man dominating “a world in which he himself does not exist” having “lost his voice and his hope, and been left behind meaningless to himself” [PK 380]. In short, the embrace of epiphenomenalism leads to severe epistemic self-doubt and chronic ethical inarticulacy that can only be “overcome” through fanaticism.

This trivialization of the agency of human thought fed directly into another aspect of Marxism that Polanyi eschewed, the view that pure science was a farce and needed to be unmasked as really being technology, and that technology should be glorified as the only *real* science [PK 238]. By reducing science to technology, Marxism effectively converted “Socialism from a Utopia into a Science” [PK 229]. Marxism’s rejection of the autonomy of pure science and valorizing of technology based upon its implications for human welfare finds contemporary expression in the TH that gives pivotal significance to the technological singularity. THs also reject the autonomy of pure science on moral grounds. Bostrom argues that given the number of people dying daily without “the chance of a posthuman existence . . . it is paramount that technological development . . . is pursued

with maximal speed”; “a delay of a single week equals one million avoidable premature deaths—a weighty fact which those who argue for bans or moratoria would do well to consider carefully.”⁴⁷

Obviously, Polanyi would have nothing but respect for the concern for human life that Bostrom’s call to technological development voices. However, I am certain that Polanyi would raise a suspicious eye at the unqualified faith Bostrom, like most THs, places in technological fixes. After all, a strong case can be made for tracing the present magnitude of world hunger and poverty to the unintended social consequences of intended social advancements through technological applications. Moreover, the centralized top-down dictation of sciences’ agenda entailed by Bostrom’s clarion call for technology to address pressing needs of human welfare bears worrisome correspondences to Socialist revolutionary science. In fact, according to Polanyi, allowing human welfare to set science’s agenda actually damages the prospects of human welfare because important discoveries, discoveries that may result in great improvements in human welfare, can not be the focal object of scientific endeavor, but arise from scientists “freely making their own choice of problems.”⁴⁸ Science advances “only by essentially unpredictable steps, pursuing problems of its own, and the practical benefits of these advances will be incidental and hence doubly unpredictable” [KB 59].

Finally, Marxism and TH both pursue revolutionary and perfectionist trajectories, Marxism out of its perception that society is mutable and therefore definitely improvable and TH out of its perception that human nature is mutable and therefore indefinitely improvable. Marxism believed human nature could be changed indirectly by changing first the macro-economic forces through which it is structured. THs believe human nature can be *directly* changed through direct technological interventions performed on individuals and their genes. Polanyi’s conservatism is expressed in his hierarchal, anthropocentric, and even to some degree elitist outlook. He recognizes humans to occupy the highest level in the hierarchy of living beings—“the top of creation” [SM 59]—and understands social change as something best grown into organically, rather than dictated from a purported blue-print for the future. His hierarchal commitments come to bear directly on the demands of perfectionism found in both Marxism and TH. “[B]y referring to the logic by which successive levels of reality are related to each other” [TD 85], Polanyi rejected as transgressing the hierarchical grain of the universe the bloated notions of human self-determination and the inordinate conceptions of self-design underwriting revolutionary outlooks. The lower levels without which the higher could not emerge necessarily place limits on the higher levels, so that the demand for social and personal perfection must be tempered by the recognition that society, at one level, is an organization of power and profit, and that the higher level of moral principles can only be realized “within the medium of a society operating by the exercise of power and aiming at material advantage” [TD 86]. If totalitarianism is to be avoided, Polanyi was convinced that we must learn to accept that all societal advances will always be tainted by the limitations of the social mechanism that alone can bring them about: “[u]njust privileges prevailing in a free society can be reduced only by carefully graded stages ... An absolute moral renewal of society can be attempted only by an absolute power which must inevitably destroy the moral life of man” [PK 245]. Clearly Polanyi would sense the specter of violence haunting the impatient TH visions of and aspirations for the revolutionary transformations of human nature required to reach our posthuman destiny.

Conclusion

Even if the utopian TH dream of engineering ourselves into perfection turns out to be a self-indulgent and unrealizable fantasy, the mere belief that such is possible, if taken seriously by governments (as it has already been in the US and UK), would nonetheless likely deflect their attention and efforts from the requirements

of legitimate social reform. After all, if we are on the verge of engineering ourselves into perfectly happy states of being without needing to negotiate the macro forces of social organization that are notoriously recalcitrant and unpredictable in outcome, why would we be inclined to spend today's resources of time, energy, and money on social programs, organizations, and reforms rather than invest them in efforts to ramp up technological research and development and thereby foreshorten the temporal gap separating us from posthuman bliss? In fact, the anticipated emergence of "techno sapiens" is already shaping the Western cultural and social imagination as well as its research, and the policy priorities of governmental/military, corporate and academic interests.⁴⁹

I think, and I think Polanyi would agree with me, that what's most significant about the TH project isn't the debate about the probabilities of its predicted future or even conceptual coherence of its possible realization, but rather what it actually signals about the state of western culture and how it is shaping our understanding of human being right now. In this sense, the future is already here, having arrived before it has begun, reflected in the metaphors, models, and images that subtly imbricate ourselves in computational registers.⁵⁰ Here let me indulge in some final thoughts of my own which have arisen from recently drenching my thinking in Polanyi's and THs' writings.

The TH project seems to me to be a desperate effort of modernist critical thought to recover the certainty and familiarity of the premodern cosmos, the repudiation of which marked the birth of modernity. I think TH is all about this ancestral birthmark. TH wants certainty, certainty about its beliefs and certainty about its blessed destination, but it wants it on its own terms: it wants to be the author of this certainty. TH wants to inhabit a world that is familiar, predictable and reasonable, but it wants to be the author of this world. Having embraced the objectivist Laplacean ideals that leave no place for realities that cannot be rendered explicit, algorithmic and objective, it faces a disenchanted world, a dead world-machine with only quantities, no qualities, a universe of facts with no value, and a universe of mechanism without purpose. TH arises from a hunch, long in the making, that *Homo sapiens* cannot only re-enchant the world with certainty and familiarity, with *virtual* qualities, values, and purposes on its own terms and through its own means, but that it can even give birth to itself by re-making itself in the image of its desires and fantasies, finally exchanging its birthmark for a trademark.

Endnotes

¹ The Singularity Summits held at Stanford University in 2006 and 2007 are indicative of a growing legitimacy of and interest in the ideas of the THs. Wikipedia's entry on the TH organization, "Singularity Institute for the Advancement of Humanity," reveals that the 2006 Summit had 1,300 in attendance. Alyssa Ford, in her 2005 "Humanity: The Remix," reports that the World Transhumanist Association welcomes 80 new members a month. See *Utne Reader*, May/June 2005, available online at http://www.twliterary.com/jhughes_utne.html.

² Transhumanism is not one doctrine; it comes in many flavors that we won't be able to sample in this short overview of its most common tenets.

³ William Saletan, in his article "Among the Transhumanists: Cyborgs, Self-mutilators, and the Future of Our Race," commenting on a sector in the audience at the 2006 Singularity Summit held at Stanford: "Remember those kids who played Dungeons and Dragons and ran the science-fiction club in your high school? They've become transhumanists." This article is available online at <http://slate.com>.

⁴ A rather disconcerting reflection of such limitations is Nick Bostrom's discussion of how wonderfully good life will become "when we succeed in overcoming many of our current biological limitations through technology." See his 2001 interview in *Technology Now* available at <http://www.nanotech-now.com/nick-bostrom-interview-122002.htm>. Hans Moravec, in his article "The Senses Have No Future," claims that the

senses have become liabilities now that we are entering the densely interconnected worlds of cyberspace; he wants to bypass sensory processing and in its place have computers directly port into the thinking portions of the brain—all our senses, he says, are doomed to become obsolete. See <http://www.frc.re.cmu.edu/~hpm/project.archive/general.articles/1997/970128.nonsense.html>.

⁵ Note his website for life extension supplements, <http://www.fantastic-voyage.net>, and the subtitle of his recent book, *Fantastic Voyage: Live Long Enough to Live Forever*, co-author Terry Grossman, Rodale Press, 2004.

⁶ Slavoj Žižek refers to TH metaphysics as “a kind of spiritualized materialism.” See his “No Sex, Please, We’re Post-human!” available online at <http://lacan.com/nosex.htm>.

⁷ Interesting to note that Norbert Wiener, the man who first conceptually linked the switches of computational gates with neuronal firings of the human central nervous system, anticipated mind downloading in his book *The Human Use of Human Beings: Cybernetics and Society*, 2nd ed. (Garden City, N.Y.: Doubleday, 1954), where, on pages 103-4, he argues for the theoretical possibility of telegraphing a human being. Marvin Minsky at MIT, having also romanced the idea of informational essences, believes that it won’t be long before we will be extracting human memories from the brain and importing them, fully intact, to computer disks, “Why Computer Science Is the Most Important Thing That Has Happened to the Humanities in 5,000 Years” (public lecture, Nara, Japan, May 15 1996) cited in N. Katherine Hayles, *How We Became Posthuman* (Chicago, University of Chicago Press, 1999), 13, n. 23.

⁸ Nick Bostrom, “A History of Transhumanist Thought,” *Journal of Evolution and Technology*, 14 :1 (April 2005):9.

⁹ Hans Moravec, *Mind Children: The Future of Robot and Human Intelligence* (Cambridge: Harvard University Press, 1988), 108.

¹⁰ UCLA biophysicist Gregory Stock, author of *Redesigning Humans: Our Inevitable Genetic Future* (New York: Houghton Mifflin, 2002), queries whether the route to this new species might not require a “shift from [humanity’s] present biological substrate—the carbon and other organic materials of our flesh—to that of silicon” See “The Last Human,” available on KurzweilAI.net, June 5, 2002 at <http://www.kurzweilai.net/meme/frame.html?main=memelist.html?m=3%23708>.

¹¹ Nick Bostrom, “Transhumanist Values,” *Special Supplement: Journal of Philosophical Research* (2005), ed. Frederick Adams, p. 4. Bostrom goes so far as to claim that “Had Mother Nature been a real parent, she would have been in jail for child abuse and murder.” See “In Defense of Posthuman Dignity,” *Bioethics*, 19:3 (2005):211.

¹² George Dvorsky notes that “Transhumanists believe that humanity ought to enter into a post-Darwinian phase of existence where intelligences, rather than the blind forces of natural selection, are in control of their own evolution” in “Better Living through Transhumanism,” *The Humanist* 64:3 (2004): 7.

¹³ In light of our present immersion in technology and the consequent salubrious extensions of our bodies’ capabilities, Bostrom quips “[i]n the eyes of a hunter-gatherer, we might already appear ‘posthuman.’” See “In Defense ...”, p. 213.

¹⁴ Hayles (1999): 283.

¹⁵ Gordon Moore, “Cramming More Components Onto Integrated Circuits,” *Electronics* 38:8 (April 19, 1965):114-117.

¹⁶ See his second chapter, “A Theory of Technology Evolution,” in his recent book, *The Singularity is Near: When Humans Transcend Biology* (New York: Viking, 2005).

¹⁷ I. J. Good, “Speculations Concerning the First Ultra-intelligent Machine,” in *Advances in Computers*, Franz L. Alt and Morris Rubinoﬀ, eds., Vol. 6, (New York: Academic Press, 1965), 31-88.

¹⁸ Vernor Vinge, “The Coming Technological Singularity: How to Survive in the Post-Human Era,”

available online at: <http://www.rohan.sdsu.edu/faculty/vinge/misc/singularity.html>.

¹⁹ “The Law of Accelerating Returns,” published on KurzweilAI.net, March 7, 2001.

²⁰ See C. Christopher Hook’s “The Techno Sapiens are Coming,” available at: <http://www.christianitytoday.com/ctt/2004/january/1.36html>. Adam Keiper notes that “The US government projects that the worldwide nanotechnology market will exceed \$1 trillion by 2015.” See “The Nanotechnology Revolution,” *The New Atlantis* (Summer 2003): 26.

²¹ Richard Feynman, the man who first imagined the possibility of nanotechnology, recognized “It would be, in principle, possible (I think) for a physicist to synthesize any chemical substance that the chemist writes down Put the atoms down where the chemist says, and so you make the substance.” See R. Feynman, “There’s Plenty of Room at the Bottom: An Invitation to Enter a New Field of Physics,” *Engineering and Science* 23 (1960): 22-36. Atom-manipulating nano-robots called nanobots are only a few decades off, according to the 2003 “The Futures Technology Report prepared for the Greenpeace Environmental Trust.” Available online at: <http://www.greenpeace.org.uk/MultimediaFiles/Live/FullReport/5886.pdf>.

²² Bostrom, “A History of Transhumanist Thought,” *Journal of Evolution and Technology*, 14:1 (April 2005): 9. Perhaps even more ominously Robert Clapp, predicts that “[m]uch of what we manufacture now will be grown in the future, through the use of genetically engineered organisms that carry out molecular manipulation under our digital control. Our bodies and the material in our factories will be the same...we will begin to see ourselves as simply a part of the infrastructure of industry,” in *Every Man and Woman an Island: The Individual Human Being as Prime in the Universe* (Victoria, BC: Trafford Publishing, 2004), 194.

²³ See Kevin Warwick’s (a professor in the Dept of Cybernetics at the University of Reading) “Cyborg 1.0,” in *Wired* (<<http://wired.com>>), where he discusses his micro-chip implants and the resulting neuronal interface with his computer. Today there are more than 40,000 patients around the world that have brain pace-makers implanted to assist them in overcoming movement disorders (such as Parkinson’s disease, or to relieve them of severe depression or obsessive-compulsive disorder). Luran Neergaard, “Brain Device for Depression Tested” *Time* May, 26, 2008, available on line at: <http://www.time.com/time/health/article/08599,1809534,00.html>. See also Adam Keiper, “The Age of Neuroelectronics,” *The New Atlantis*, No. 11 (Winter 2006): 18-21.

²⁴ For some interesting speculation on this possibility, see Moravec’s fourth chapter “Grandfather Clause” in his *Mind Children*, especially pages 109-110.

²⁵ Bostrom, “History of Transhumanist Thought,” 9. Bostrom has published a paper where he argues that the probabilities are extremely high that we and our present world are already computer simulations; see his “Are you Living in a Computer Simulation?” *Philosophical Quarterly*, 53 (2003): 243-255.

²⁶ Hayles, *How We Became Posthuman*, 37.

²⁷ Hayles, *How We Became Posthuman*, 35.

²⁸ Michael Heim, *The Metaphysics of Virtual Reality* (Oxford: Oxford University Press, 1993), 89. Most THs think of reality as one vast virtual computer eternally processing information. All matter, life, and intelligence are patterns of informational complexity. With this kind of metaphysics, moving from a biological to an electromagnetic substrate poses no conceptual problems—all that matters is the pattern!

²⁹ Moravec, op. cit., 109-122.

³⁰ Moravec, *ibid.*, 117.

³¹ Hayles, *How We Became Posthuman*, 5. Bart Kosko, Professor of Electrical Engineering at University of Southern California, proclaims, “Biology is not destiny. It was never more than tendency. It was just nature’s first quick and dirty way to compute with meat. Chips are destiny,” “Heaven in a Chip,” *Free Inquiry*, Fall 1994: 38.

³² Witness Sherle Turkle’s anecdote recounting a techno-geek’s response that “Reality is not my best window” to one of her questions in “An interview/dialogue with Albert Borgman and N. Katherine Hayles on

humans and machines,” available on online at: <http://www.press.uchicago.edu/Misc/Chicago/borghayl.html> .

³³ Fukuyama, who is quite open to many forms of somatic genetic engineering, nonetheless refers to TH as “the world’s most dangerous idea” (“Transhumanism,” *Foreign Policy*, No. 144 (Sept/Oct. 2004): 42-43).

³⁴ For an informative and entertaining look at this less Gnostic expression of Posthumanist aspiration, see Andy Clark’s *Natural Born Cyborgs: Minds, Technologies, and the Future of Human Intelligence* (Oxford: Oxford University Press, 2003).

³⁵ Fred Schwartz (ed.), *Scientific Thought and Social Reality: Essays by Michael Polanyi* (New York: International University Press, 1974), 123.

³⁶ Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (New York: Harper Torchbooks, 1964/1958), 131.

³⁷ Michael Polanyi, *The Study of Man* (Chicago: University of Chicago Press, 1959), 31, emphasis mine.

³⁸ Alvin Toffler co-authored the document “A Magna Carta for the Knowledge Age” (at the request of Newt Gingrich) that proclaimed “The central event of the 20th century is the overthrow of matter,” available on line at: <http://www.emedia.net/feed> .

³⁹ Donna Haraway, *Simians, Cyborgs and Women: The Reinvention of Nature* (New York: Routledge, 1991), 152.

⁴⁰ The consequences of reifying our metaphors are evident—even our being held captive by our metaphors—in the new “biological” discipline called “Artificial Life” (AL) which seeks to transpose “the natural form and process of life into an artificial medium” in order to create “organisms” through computer code that it understands to be *alive* because they replicate and evolve. These “organisms”, they argue, can’t be denied the status of living entities just because they are silicon-based and not protein-based life forms: according to AL, “the organism is the code, and the code is the organism,” Hayles, *How We Became Posthuman*, 229. See also Carl Zimmer’s article “Testing Darwin” *Discover* (Feb. 5, 2005). Available at <http://discovermagazine.com/2005/feb/cover> .

⁴¹ Richard Allen has challenged me on this point, asking “What about angels? Do they not bear a tacit dimension?”

⁴² Such are the bodily roots with which thought is necessarily fraught; see the Intro of Polanyi’s *Tacit Dimension* (Garden City.: Doubleday and Company, 1966), x. By the way, I think this suggests that angelic intelligence does not possess a tacit dimension.

⁴³ See John Haugeland’s essay, “Understanding Natural Language,” in *Having Thought: Essays in the Metaphysics of Mind* (Cambridge, Mass. and London, England: Harvard University Press, 1998): 60.

⁴⁴ Pseudo-substitution is a means of tacit supplementation whereby non-objective meanings are covertly relied upon to fund objectivist abstractions that are overtly deployed to replace these meanings. See PK 16.

⁴⁵ Polanyi agrees with the Orwellian claim that “belief in reality is a subversive principle under totalitarianism” [PK 243, n1].

⁴⁶ By “compatibilist paradox” in this context, I mean the paradox that arises when thinking is *thought* to be without agency—as if agency-less thought could be an agent of the thought “thought is without agency” and then *take* that thought seriously!

⁴⁷ Nick Bostrom, *The Transhumanist FAQ: A General Introduction*, Version 2.1 (2003): 31. Available at www.transhumanism.org .

⁴⁸ Marjorie Grene (ed.), *Knowing and Being: Essays by Michael Polanyi* (Chicago: University of Chicago Press, 1969), 50.

⁴⁹ Elaine Graham, “In Whose Image? Representation of Technology and the ‘Ends’ of Humanity” *Ecotheology* 11.2 (2006): 160.

⁵⁰ “The future enters into us in order to transform itself in us long before it happens,” Rainier Maria Rilke, *Letters to a Young Poet*, trans. M.D. Herter Norton, revised ed. (New York: W. W. Norton, 1934), 65.

Andrew Grosso on Polanyi as a Resource for Christian Theology

John Apczynski

ABSTRACT Key Words: Michael Polanyi, personhood, indwelling, economic and immanent trinity, Christology, marginal control, boundary conditions.

These reflections on Andrew Grosso's recent book Personal Being highlight his philosophical construction of a concept of personhood based on themes from the writings of Michael Polanyi and his use of this conception to express creatively elements of the traditional Christian doctrines on the trinity. Additional clarifications are sought regarding his formulations on the divine personhood of Jesus, the adequacy of his formulations on the intra-trinitarian relations, and the insightfulness of the absolute personhood of the divine. This study is a helpful model for extending Polanyian insights into the realm of dogmatic theology.

Andrew T. Grosso. *Personal Being: Polanyi, Ontology, and Christian Theology*. New York: Peter Lang, 2007. Pp. viii+234. ISBN 978-0-8204-8897. Cloth. \$70.95.

In this ambitious work Andrew T. Grosso goes where no student of Polanyi – to this reviewer's awareness at least – has dared to go before. His intention is to extrapolate from features of Polanyi's theory of knowing a philosophical doctrine of personhood which might serve as a resource for expressing a contemporary understanding of the traditional doctrine of the Christian trinity. On the surface, such a project may seem inauspicious insofar as an implication of Polanyi's principal epistemological concern included a critique of the autonomous subject that normally lay behind the objectivist yearnings of much of modernity. The very effort of proposing an ontological understanding of personhood might thus appear to require a critical move toward something like a totally reflective cogito. Since he is relying on insights from Polanyi's epistemology, however, the notion of the person which Grosso constructs is wholly relational. How does he arrive at this conception?

Grosso begins, as one would expect, with a survey of some features of Polanyi's theory of knowledge. Given his overall ontological concern, this exposition highlights the importance of the "object-dimension" of knowing. There is nothing objectionable in such a strategy, but it may be misleading to a reader unfamiliar with Polanyi's theory. In his exposition of the structure of tacit knowing, for example, Grosso presents this under the rubric of the structure of apprehension (17). This is proper when describing our knowledge of objects in our experience, but incomplete for a fuller account of the meaningfulness of the frameworks within which we dwell. Similarly, he develops his presentation of the hierarchical implications of reality under the rubric of "contact with reality" (37ff). This allows Grosso to emphasize Polanyi's insistence on the non-reducible elements of comprehensive entities (such as machines) subject to marginal control. This comes at the expense of implying that there is some sort of a distance that needs to be bridged between knowing and the object known, when for Polanyi a person is always already in relation to the environment through subsidiary awareness. Polanyi himself speaks of the need to bridge a gap only in heuristic moments when the subsidiary features are not quite brought into a focal whole by the knower. Grosso's emphasis even leads him to assert that in all cases of reliable knowledge there is an objective reality existing independently of the knower (147). When Polanyi makes such claims, however, they are normally concerned with "empirical" knowledge of the sort made in science (see *PK* 311, 104). The purpose of these emphases in Grosso's analysis is to highlight the importance of the role of dwelling within a framework of meaning in order to allow someone to recognize the objectivity of emergent realities present in experience.

Structuring his presentation of Polanyi's thought in this way allows Grosso to identify three key features constituting the reality of a person. There is an organizing center or an indwelling self which represents a person's sense of being oriented and is not susceptible to full articulation. There is, secondly, an indwelt self or the horizon of meaning which shapes and situates a person's identity. And there is, finally, an extended self which includes a horizon of meaning within which a person is integrated into a wider frame of meaning. These three elements are something like coordinates of personhood. None of them have ontological priority over the other; rather they are better appreciated as continuously interacting patterns of activity that constitute personhood. The process of indwelling serves to integrate and bring these features of personhood into focus for us (90-94). While all of these features may be found in his writings, Polanyi himself, as Grosso readily acknowledges, had never marshaled them together in such a way as to provide a coherent statement of what constitutes personhood. This extrapolation is the major contribution of Grosso's study, and it can be said to form his understanding of personhood based on Polanyian insights. It also forms the guiding principle for his effort to formulate an understanding of the doctrine of the Christian trinity.

The application of this understanding of personhood to the orthodox doctrine of the trinity takes us far beyond customary Polanyian themes. Because their provenance involved the use of Hellenistic metaphysical categories from the fourth and fifth centuries, any effort to explicate their meaning in contemporary forms must be cautious. Grosso is well aware of this. Yet his desire to remain faithful to orthodox formulations while utilizing Polanyian terminology leads to some problematic claims. The doctrinal claim that Jesus is the Son of God, for example, includes the fifth-century affirmation that the *hypostasis* or *persona* of the Son is the basis of the unity of the reality of Jesus. Grosso transposes this into Polanyian terms by considering the divine personhood of the Son the "supervenient dynamic" exercising marginal control over the human nature of Jesus so that Jesus is not to be understood as exercising "independent personhood" in his preaching or ministry (133-37). While this may sustain fifth-century assumptions, I am not as convinced that it is meaningful for a twenty-first century context. The doctrinal tradition never made any claims about human personality in this sense, obviously, because it was not aware of it. Might it not be more adequate to transpose these beliefs by claiming that the divine "indwelling self" functions as the ground of the "indwelt self" of the personality of the historical Jesus which is tacitly aware of this divine foundation and which must come to an awareness of it through his "extended self" mediated by his Jewish heritage? This requires, perhaps, a more flexible application of Grosso's ontological depiction of personhood.

When Grosso attempts to explicate doctrines about the "immanent" trinity in terms of the Polanyian perspective on "graduated multi-modalism" (147), we face similar difficulties if this suggestive metaphor begins to function more like a literal metaphysical doctrine – which appears to be the way he attempts to push these reflections. In a very dense presentation of the intra-trinitarian relations, Grosso explains the relations as exercising marginal control over the "boundary conditions" within the divine being (152-55). Grosso may be on to something here, but to speak of boundary conditions within the divine being which is normally understood as limitless is more than paradoxical. Finally, Grosso asks about the absolute divine personhood of God, in distinction from the immanent relations. Here he wisely qualifies this discussion by utilizing the medieval notion of formal, not real, distinctions (157). This permits him to say that the absolute personhood of God can be understood to be the operational dynamics of personhood within the trinity and, derivatively, within the created order.

This is a fine exercise in expressing the traditional orthodox doctrine of the trinity through the use of a contemporary Polanyian idiom. Students of Polanyi interested in exploring the basic contours of Polanyi's thinking will be best advised to look elsewhere, such as in the studies by Gelwick or Prosch. Students of Polanyi who would like to probe how Polanyi's thought might be helpful for theological reflection on the dogmatic tradition of Christianity, however, would find a splendid model here. Grosso's formulation of the features of personhood is stimulating and wholly consistent with Polanyi's outlook. His application of these features to the orthodox doctrine of the trinity is illuminating and suggestive, even though, as I indicated, the complexity of the issues call for further clarification. It marks an auspicious beginning.

Re-Visiting *Personal Being*: A Response To Apczynski's Review

Andrew Grosso

ABSTRACT Key Words: indwelling, subsidiary awareness, Polanyian realism, theology

This brief essay addresses questions raised by John Apczynski's review of my book, Personal Being, especially (1) the nature of subsidiary indwelling, (2) the ontological ramifications of Polanyi's thought, and (3) the transposition of Christian doctrine in a more contemporary, Polanyian key.

I am grateful to John Apczynski for his careful and thoughtful reading of my book, and to Phil Mullins for the opportunity to respond to Apczynski's review. This brief exchange has given me an chance to revisit my arguments and consider how I might sharpen and elaborate them.

Apczynski rightly notes that (1) at the heart of my efforts is the extrapolation of a Polanyian understanding of personhood amenable to theological reflection and (2) my aim is to provide, not a Polanyian version of absolute idealism, but a more relational understanding of the being of persons.

There are, I believe, three primary questions Apczynski wants to pose about my project. First, he's a little apprehensive about my reading of Polanyi's understanding of the tacit dimension, especially (1) the phenomenology of indwelling and (2) the ontological ramifications of personal knowledge. Second, he's not convinced that my efforts at rehabilitating traditional Christian doctrines are entirely effective. Third, he wants to see a more detailed account of the broader region lying beyond the relatively narrow horizon of the study.

It might be fair to say that some of these issues follow from the different ways in which Apczynski and I make use of Polanyi's thought. As I mention in the book, Richard Allen (and others) have pointed out that there is more than one way to approach Polanyi. I opted neither to confine myself to the precise limits of Polanyi's epistemology nor to superimpose his thought on a controlling theological system, but to pursue a mutually determinative conversation between his philosophy and a more theological mode of reflection (cf. 113-117). I was especially interested in exploring (and even pushing) the boundaries of Polanyi's program relative to his views on personhood, language, and the possibility of (Christian) metaphysics.

I think Apczynski and I agree about the differences between a phenomenological as opposed to an ontological exposition of the tacit dimension; there is a significant and important difference between "the meaningfulness of the frameworks wherein we dwell" and the "object-dimension' of knowing." Apczynski's

concerns in this regard highlight the need for a more fulsome exploration of the character of religious experience from a Polanyian perspective. I find Polanyi's thought a potentially rich resource for the development of a theology (including a theological method) equally attentive to "descriptive," "exact," and "deductive" modes of religious awareness (see PK, 82-87).

I'm intrigued by Apczynski's observation that subsidiary awareness situates us within an environment prior to our focal awareness of particular objects within that environment, thus obviating the need to overcome any perceived "distance" between these objects and ourselves. On the one hand, this is of course wholly in keeping with Polanyi's thought, and was also one of the principles underlying my distinction between the "indwelling self," the "indwelt self," and the "extended self" (88-95). On the other hand, I wonder if we may not need to distinguish between different modes of subsidiary indwelling; it seems that the kind of subsidiary awareness one employs when dwelling in a proximate horizon for the purpose of apprehending a distal object is markedly different from the kind of subsidiary "awareness" (if we may even call it that) at work when we indwell a proximate horizon that we do not so employ. I would not want simply to relegate this latter mode of subsidiary indwelling to something like the unconscious, even less to suggest that such a subsidiary horizon cannot meaningfully be said to exist for us, because I think this kind of indwelling would be an important element in the exposition of a fully relational account of personal being. But much more would need to be said to develop this possibility further.

The "'object-dimension' of our knowing" and the ontological thrust of Polanyi's thought is something that I wanted to try and push rather hard. Polanyi's taxonomy of language, as well as his commitment to the importance of freedom, rationality, and the axiological dimensions of knowing (both moral and aesthetic) suggest to me that his work yields anything but a minimalist (i.e., strictly empirical) ontology. One might suggest that Polanyi's commitments to such principles were largely pragmatic, but Polanyi eschewed strictly utilitarian accounts of knowing (e.g., PK, 16-17, 113-114, 169-170).

I'm not sure the theological concerns Apczynski raises could be adjudicated on strictly Polanyian grounds. He is, for example, unsure about the value of "Hellenistic" thought forms in today's world, but I would suggest (1) that one might justifiably read the patristic tradition as the Christianization of Hellenism rather than the Hellenization of Christianity and (2) that it may be a mistake to conflate traditional formulas with the meaning they intend to express. We may have reason to revisit the technical details whereby a given doctrine is articulated, but doing so does not automatically enjoin us to reject the doctrine itself; to do so would be to confuse a focal object for its subsidiary horizon. In part for this reason, I'm not sure Apczynski's alternative christological proposal is viable; it sounds more than a little Apollinarian to me. However, he's right to suggest that I should have engaged the issue of theological language and the difference between real and formal distinctions earlier and more thoroughly than I did, rather than burying it in the middle of my consideration of immanent divine personhood (148-160). I covered some of this ground in chapter four (see esp. 113-125), but I'm afraid my enthusiasm caused me to pass too quickly over some important methodological problems.

Apczynski is entirely justified when he says that the complexity of the issues I engage requires more extensive and detailed clarification. It is my hope to use the foundation I outline in *Personal Being* as a starting point for a more far-ranging personalistic cosmology, one organized around the concept of interpersonal mutual indwelling (154, 160-166). I'm indebted to Apczynski for providing me with an opportunity to reflect critically on my initial efforts.

REVIEWS

Dennis Ford. *The Search for Meaning: A Short History*. Berkeley: University of California Press, 2007. Pp. xxii+290. ISBN-13: 978-0-520-25300-1. \$24.95 cloth.

Ford opens his Preface with this question: “Does life have meaning?” This is quite a different question than “Does life have *a* meaning?” Ford has written an introductory approach to the former question, but as an avowed postmodernist he eschews the latter question. In emphasizing the various approaches people have used to find meaning in life, he has written an account that relies on both psychology and philosophy but is distanced from religious approaches.

The book is labeled a short history, but that title is somewhat misleading. This is no chronological approach to the question of meaning, but rather more a categorical or typological approach. Each chapter concludes with pertinent answers to the same basic four questions about meaning. After Ford’s introductory chapter, his next four chapters, forming Part I, deal respectively with myth, philosophy, science, and postmodernism. There is a certain overlapping sequential aspect to these topics, but that is as close to a historical account as Ford gets. He terms Part II of the book “Contemporary Sources of Meaning,” and here he lists in order pragmatism, archetypal psychology, metaphysics, and naturalism. There is some obvious overlap here with the first part: why have a chapter on science and then later one on naturalism, or chapters on both philosophy and metaphysics, for instance?

Ford’s exposition is based on two assumptions: “First, the meaning otherwise available in our culture—including that offered by historical and institutionalized religions—is no longer persuasive, and, second, living without meaning is unacceptable” (xix). The first assumption comes out of Ford’s own experience and is certainly debatable as a general statement. The validity of the second assumption depends upon what Ford means by “meaning,” and an implication of

his subjective approach is that meaning is not pinned down to any strict definition. Unfortunately, this all too often leads to equivocation and murkiness in his text. But as a rough generalization, Ford seems to want to focus his discussion of meaning upon a felt sense of significance or purpose in one’s thought and action. On such a basis, his second assumption seems warranted.

Another assumption Ford makes struck me at first as a bit self-congratulatory and presumptuous. He writes, “Talking openly about meaning and meaninglessness is one of the last taboos. The question of meaning makes us uncomfortable” (xv). To say the topic is taboo seems unjustified because, as Ford openly acknowledges, much of the more serious literature of the nineteenth and twentieth centuries deals with questions of meaning. However, when I used *The Search for Meaning* as the basis for two different discussion groups, I did find a certain number of the participants reacted negatively or even hostilely to the book. Part of this reaction can be attributed to some poor writing on Ford’s part. The quality of the prose is uneven; some nice quotes or insights are compromised too often by turgid exposition or irritating inconsistencies. But the negative response is caused by more than hostility to uneven writing: Ford seems right in suggesting that for quite a few people discussion of meaning upsets their sense of stability and security in life. This further suggests that his assumption that talking about meaning is disturbing also has some validity. People are easily upset when their basic beliefs about significance in life are questioned. Ford gives a convincing illustration of this in his introductory chapter through his discussion of the crisis precipitated in Leo Tolstoy’s life once he faced the question of “Why?” What Ford omits to describe is the answer Tolstoy eventually worked out, which is centered on a life of peace, love and service modeled on the life of Jesus.

Ford's chapter on myth begins by taking its cue from the way Homeric epics have commonly been treated by such commentators as Eric Havelock and John Finley. Myths are said to emphasize the surface of things, and narrative demands take precedence over conceptual structure. "No thematic or conceptual summary of a myth is possible, because its essence is in the bright particulars" (29). Such a claim is surely exaggerated: explanations in terms of the will of the gods or the breaking of taboos are examples of repeated conceptual features found in many myths. Ford then switches to reliance on Eliade. Ford calls the tension that is created between his earlier emphasis on particularity and Eliade's emphasis on universality "paradoxical" (46). "The world expressed by myth is unchanging and eternal; the myths do not change; the gods and actors always play out the narrative in the same way" (30). This view ignores the plasticity of myths through time; they are altered by the bard or shaman in a pragmatic way as they respond to audience interest. Ford does acknowledge that mythic themes after the classical period have been picked up and utilized in many different guises.

Of interest to Polanyians is this quotation from Ford: "Knowing mythically is not disinterested and objective but engaged and tacit, like the knowledge one has of riding a bike, hitting a tennis ball, or greeting a neighbor" (34). In even more Polanyian terms, one could say that the mythic worldview is *indwelt* almost like a perceptual skill, and the person so identifies with the mythic hero and the mythic lessons that they become dominant subsidiaries in the construction of that person's reality. "For those who live mythically, there is no myth or distance between the knower and the known; the world in which we live simply is, and we respond" (51). Ford contrasts such unself-conscious acceptance of a mythic framework with modern skepticism about any framework or any commitment, which raises the specter of meaninglessness, yet he is also leery of buying uncritically into any world view. Polanyi's combination of faith and fallibilism would be helpful to him here, but he never does cite Polanyi in the book.

If in Ford's account living mythically is overly naïve, living philosophically is seen as an ongoing attempt to overcome discontent. "The philosophical mind asserts that skepticism and doubt are more reliable avenues to truth than faith and engagement" (76). It may seem that the model for Ford's exposition of the philosophical mind is Descartes, but surprisingly it is Plato, or better, Platonism. In skepticism about the reality of the everyday world, the Platonic mind escapes to the transcendent world of the Forms. "The philosophic mind is thus world-denying, ascetic, and dualistic . . ." (73). Clearly such a formulation is hardly fair to philosophy as a general concept, although it applies to certain historical forms of philosophy.

Aristotle gets his due in the chapter on science. His explanation of causation and emphasis on Forms in nature is interpreted as that which sets science on its course. The science that gets described by Ford is not Polanyi's view of science, but rather a form of the objectivism that Polanyi attacks. One who sees science as the source of meaning, Ford claims, must learn to find some joy in the progress of knowledge and conform to the facts and laws of nature (100).

Kant, relativity and quantum theory, and finally Kuhn are interpreted by Ford as the precursors to postmodernism. "For the postmodernist, our ideas and symbols do not correspond to reality, they produce reality through an act of interpretation or construction, in which we select and reify one of many possible worlds according to our social and individual needs" (126). There is an aspect of Polanyi's thought, as when he discusses the Azande worldview, that correlates with this dimension of postmodernism. But postmodernism plunges much deeper into relativism than Polanyi would accept. Postmodernists reject the modernist idea of Truth and replace it with pragmatic functions.

It should be no big surprise that among relatively recent writers, William James is Ford's favorite. Ford emphasizes the pluralistic, voluntaristic, interpretive aspects of James' thought; James comes across as

a proto-postmodernist. Truth is not discovered. It must be made (154). It is biographical.

Given Ford's affirmation of pragmatism and relativism, it is noteworthy that he is also appreciative of James Hillman's archetypal psychology and the wisdom tradition today perhaps most associated with Huston Smith. Each affirms a sort of absolute in the world that grounds meaning – Hillman referring to autonomous archetypes that shape our deepest emotions, and Smith claiming that it is the unchanging highest levels of being that grant us meaning.

One of the virtues of Ford's book is that he is generally successful in offering genuinely different approaches to meaning without unfairly backing favorites and denigrating alternatives. The other side of the coin is that he does not argue consistently or present evidence for a specific understanding of meaning. Perhaps his basic stance might be termed empathetic postmodernism. Thus the book is descriptive and suggestive rather than constructive and systematic. In sum, Dennis Ford offers a reader a number of optional ways of viewing meaning, some of which will be congenial to those appreciative of Polanyi's insights.

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Leslie Paul Thiele. *The Heart of Judgment: Practical Wisdom, Neuroscience, and Narrative*. Cambridge: Cambridge University Press, 2006. Pp. x + 321. ISBN: 0-521-86444-5. \$88.00. Hardback.

A professor of Political Science at the University of Florida, Thiele seeks to revisit the topic of practical reasoning, especially in light of recent work in neurobiology. The result is an understanding of practical judgment that draws from the work of philosophers, neuroscientists of various sorts, and narrative thinkers. The picture of practical reasoning that emerges from his account is that of a comprehensive human capacity, which the following statement nicely conveys: “Blending rational, perceptual, and affective capacities, operating at the conscious level and below

the threshold of consciousness, the human judge manages to forge meaningful patterns from a blooming, buzzing world” (ix). This “blooming, buzzing world” is marked by its multi-dimensionality, such that “no one account, no single story can capture the full import of moral and political life, or settle, once and for all, the rightness or wrongness of its components” (12). Political and moral judgments, like those made in the worlds of medicine, business, and the military deal with what Thiele calls “deep complexity,” i.e. “relationships that are so intricate and interdependent as to preclude deductive calculations of reactions and outcomes” (9). Given this complexity, Thiele argues that increased attention to practical judgment is precisely what is needed for healthy democracy “in a world burdened by claims that subjective preferences are the final word” (278).

As noted above, Thiele seeks to integrate philosophical, neurobiological, and narrative insights into his account of practical judgment. Thiele's appropriation of philosophers is most focused in the first chapter, “An Intellectual History of Judgment.” There, Thiele offers a lucid, yet concise narrative of how twelve different thinkers or schools of thought, from Plato to contemporary decision theorists, have had to account for practical judgment. They may differ on how tightly practical reasoning is tied to morality (Aristotle v. Machiavelli) or whether it requires strong individuals or democratic practices to thrive (Nietzsche v. Dewey). They may emphasize its strengths or its limitations (virtually anyone v. the post-modernists), but all recognize that the power of judgment is central to human existence.

Thiele's appropriation of the neurosciences is more dispersed throughout the book, although it occurs in three main places. The first comes in his discussion of the role experience plays in developing skill in practical reasoning. Some of the experience that is relevant, Thiele contends, is ancestral experience that creates heritable brain maps that are then modified by personal experience (73-89). A second place where neuroscience plays a major role in Thiele's account is that of what he calls the unconscious (although that is

perhaps a misnomer). Here, Thiele draws from theories of a modular brain to show how the tacit nature of practical reasoning is rooted in the development of perceptual skills and implicit memory (117-129). Neurobiology even shows up in the chapter devoted to narrative when he suggests that brain maps are a kind of narrative of lived experience (204-205).

In discussing narrative (chapter 5), he argues that evolutionary history makes it possible for humans to develop a reflexive identity, but that language is necessary for completing that process (217). He goes on to argue that morality is primarily narrative in nature (238-244) and then to explore the limits and possibilities of using novels in forming practical judgment (245-263). He concludes by reflecting on the plurality of narratives and suggesting that good judgment entails the capacities to enter various stories, see from many vantage points, and be open to transformation (273-276). In this respect, Thiele offers a more complex account of narratives than Alasdair MacIntyre or others who have established a reputation as narrative thinkers. Thiele readily recognizes that people live in many narratives that are often nested in complex ways (266-269).

All of these sources blend together as Thiele, throughout the book, develops a subtext on how to develop practical reasoning. Thiele agrees with Aristotle that such learning comes primarily through practice—a minimum of 10 years according to some studies that trace the development of expertise in chess, fine arts, and math (93)! Experience can be supplemented with formal instruction, but such instruction must include reflection on actions that provide a genuine possibility of making mistakes (see especially 104-114). Reading and critical reflection on novels can also provide a mechanism for gaining experience vicariously, as well as developing perceptual capacities (245-257).

This summation suggests many possible connections between Thiele's understanding of practical judgment and Polanyi's account of personal knowledge: the importance of perception, the task of recog-

nizing patterns, the inclusion of passions in an account of human thought, the place of apprenticeship in developing skills, and the parallels with clinical judgment. In fact, Thiele make rather extensive use of Polanyi at two main points in his account (even if he does confuse Michael with Karl at one point [254]). The first of these comes in the third chapter, one devoted to "The Power of the Unconscious." There, Thiele draws on Polanyi's account of tacit knowledge as an acquired "knowing how" that can never be fully explicit (130-137). The second comes in the fifth chapter, "The Riches of Narrative." There, Thiele incorporates Polanyi's idea of indwelling into his argument that narratives, because of their rich textures, can be catalysts for internalizing the details that are the stuff of practical reasoning (254). His appropriations of Polanyi are both fair to Polanyi (although I wonder if Polanyi would argue that tacit knowledge should not be included in a discussion of the unconscious) and appropriate to his argument. Given Thiele's familiarity with Polanyi, it is surprising that he does not find Polanyi's discussion of the passions likewise useful.

The Heart of Judgment can be taken, alongside the work of Alasdair MacIntyre, Robert Bellah, and others, as another constructive response to the pluralism and resulting fragmentation of the contemporary western world. It does offer some advantages over these other approaches. Unlike MacIntyre, Thiele does not advocate as a solution a return to living in a monolithic narrative—his account of narrative pluralism is too thoroughgoing for that. Practical judgment, the ability to sort through competing claims, does indeed seem to be the skill most needed at this time. In this respect, *The Heart of Judgment* has much in common with Albert Jonsen and Stephen Toulmin's *The Abuse of Casuistry*, a work that Thiele somewhat surprisingly ignores. Thiele is also more willing to let the sciences inform his work than at least the early MacIntyre (whose later *Dependant Rational Animals* suggests more openness to biological accounts of human nature).

Still, some questions remain. Although the account of practical judgment that Thiele develops

resonates with Aristotle's at many points, Thiele makes one subtle, but important switch. For Aristotle, practical reasoning requires a polis that is at least relatively good. For him people from deficient backgrounds will not be able to develop the crowning virtue of practical reasoning. For a good society, Thiele substitutes a richly-textured society. Is this the same thing? Put differently, are democratic practices and institutions vibrant enough to produce people of good practical judgment? Perhaps the work of Jeffrey Stout and others is needed to supplement Thiele's argument.

Nevertheless, one cannot do everything in one work. Thiele is to be commended for putting practical reasoning at the forefront of discussion in a way that integrates fields that all too often do not communicate with one another. The end result is a book that offers as fine an account of practical reasoning as is currently available, one that also offers many fruitful ideas for those interested in ways of fostering skill in practical judgment.

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Tony Clark. *Divine Revelation and Human Practice: Responsive and Imaginative Participation*. Eugene, OR: Wipf and Stock, 2008. Pp. 228 + xvi. ISBN 13: 978-1-55635-516-5. \$16.20 paperback.

In preparing to read and review this book by Tony Clark, part of me hoped to be favorably impressed both because of its focus on Polanyi's theory of knowledge and its publication by a press with which I currently have a book contract, while another part of me expected to be unimpressed by its Barthianism in theology. And indeed my actual impressions did reflect an ambivalence precisely along those substantive lines.

This is a well-written book whose prose flows smoothly. With subtitles such as "Intellectual Passions," "Indwelling," "Faith and Doubt," "Commitment, Calling, and Universal Intent," and "The Ubiquity of the Tacit," Chapter 3 serves as a very good

introduction to or refresher on Polanyi's epistemology. Drawing on all of Polanyi's books, it makes generous and effective use of quotations as it helpfully schematizes Polanyi's major themes.

With regard to religion and theology, Clark readily grants that Polanyi himself was hardly a positivist with respect to revelation. He notes that Polanyi did not elaborate much on religious epistemology, nor was he necessarily fully consistent in what he did write. He critiques a tendency in Polanyi's references to religion to suggest that, unlike with science and many other areas of human inquiry, religious commitments may not refer to any objective reality at all (138-39)—a legitimate complaint as I read Polanyi.

Like Clark I believe that Polanyi's epistemology holds great promise for religious traditions. He astutely critiques Gordon Kaufman for sharply distinguishing the natural and human sciences as objective from theology and metaphysics as imaginative construction—in the case of theology typically arbitrarily reifying tradition (204ff). Clark rightly chides Polanyi for his own failure to emphasize the crucial role of practicing religious communities for religious knowledge—instead focusing on the individual Christian—a failure all the more glaring because of Polanyi's recognition of the cruciality of the scientific community for advancing scientific knowledge (139).

The main focus of Clark's appropriation of Polanyi for theology is to develop the claim that Polanyi's general epistemology can legitimately and profitably be brought to bear in support of indwelling and imaginative participation in Christian revelation understood in Barthian exclusivist fashion. Here is where I have problems with Clark's argument. He takes umbrage at Kaufman's characterization of Barth's assumption of the truth of Christian revelation as "arbitrary" fideism, defending this revelation as a self-grounding disclosure (a move which can boast an initial plausibility in terms of the acritical aspects of Polanyi's epistemology) (211). Clark finds it very significant that Kaufman denies the possibility of a definitive divine disclosure on the grounds that God is not

a percept, like a book, dog, or human being (among other grounds) (209ff). Citing Alvin Plantinga, he concludes that Kaufman has given us no reasons to doubt the logical possibility of an omniscient and omnipotent God deciding to make Godself known (210).

Recalling a point in Hume's *Dialogues Concerning Natural Religion*, I grant that God could reveal Godself—indeed in an unambiguous way. We can imagine God declaring, across the earth in each human being's own language, God's reality and will. This use of imagination points to the real problem in Clark's Barthian position. We can devise a scenario in which the divine chooses to become an unambiguous percept to all of humankind. But Barthians and their ilk want to have their cake and eat it too. God chooses to reveal Godself in a more ambiguous way, in which the divine is veiled in its unveiling and which only certain humans truly "hear." At the same time any other religion's claim of a partially revealing, partially veiling manifestation of the divine is false. Obviously any religious tradition can in theory play this same exclusivist game. In practice many, probably most, Muslims accept the exclusive finality of God's self disclosure through Muhammad (even as perhaps most lay Christians still assume such finality about revelation in Christ, especially given the tremendous growth of Christianity in the developing world). Such exclusivity constitutes the elephant in the room which Clark seems not to notice. Such exclusivity I believe constitutes the fundamental arbitrariness which, to Clark's perplexity, troubles Kaufman.

Before concluding I do want to address an element of style also carrying substantive implications for tradition: Clark's use of exclusively masculine pronouns for God. While such exclusive language from "people in the pews" does not faze me, I must confess that I was somewhat put off by such apparent nonchalance by a contemporary Christian theologian. Such exclusivity has become problematic for most academic theologians, with telling critiques of such practice mounted from within Christian tradition. Here is a case where I expect at least some explanation, some appeal to critical reason, even if just in passing.

I will now address the issue of whether Clark's exclusivist model of revelation is problematic not only with respect to Polanyi's own religious convictions, but with respect to important elements of his epistemology. In virtually every area of human endeavor and inquiry, humans continue to attempt to discover, and often succeed in discovering, some of the indeterminate possible future implications Polanyi believed reality always holds. History represents an area which does not quite fit into the same mold, both because our access to the distant past falls under unique constraints and because the past in its own right is already determinate in a sense in which the just present and future are not. Yet the particular areas of history we study, like politics and art, continue to unfold. I personally find it incongruous, with the rise of human personhood from our convivial biological origins, as more of the components of our universe emerge into coherent patterns of meaning and more of the potentialities of that universe become actualized and known, to so limit what I believe to be the most holistic dimension of human life, namely religion. For me, to aver that the divine has chosen to limit its making known of itself to one definitive act through one person or event of the past—and granted the present and future ramifications of this past in the lives of believers through the divine spirit—unnecessarily and implausibly limits God.

In short, regarding the religious and theological ruminations of *Divine Revelation and Human Practice*, neo-orthodox of the Barthian wing, Lindbeckian postliberals, Milbankian Radical Orthodox, and Meekian evangelicals likely will regard Clark's appropriation of Polanyi's epistemology in the service of religious exclusivism as valid, while those more inclusively or pluralistically inclined, like myself, will demur from Clark's basic assumptions about Christian revelation.

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