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# *On Reading Polanyi and Reading About Polanyi's Philosophical Perspective: Notes on Secondary Sources*

*Michael Polanyi: The Art of Knowing* by Mark T. Mitchell (Wilmington, Delaware: ISI Books, 2006).

*Thinkers of Our Time: Polanyi* by Richard Allen (London: Claridge Press, 1990).

*Everyman Revived: The Common Sense of Michael Polanyi* by Drusilla Scott (Lewes, Sussex: Book Guild Limited, 1985; Grand Rapids, MI: Eerdmans, 1995).

*The Way of Discovery: An Introduction to the Thought of Michael Polanyi* by Richard Gelwick (New York: OUP, 1977; Eugene, OR: Wipf & Stock, 2004).

*The Tacit Mode: Michael Polanyi's Postmodern Philosophy* by Jerry H. Gill (Albany, NY: SUNY Press, 2000).

*Michael Polanyi: A Critical Exposition* by Harry Prosch (Albany, NY: SUNY Press, 1986).

## **On Reading Polanyi: The Problems**

The spring of 2008 marked the fiftieth anniversary of the publication of Michael Polanyi's *Personal Knowledge: Towards a Post-Critical Philosophy*.<sup>1</sup> Every scholar that I know who is seriously interested in Polanyi identifies *Personal Knowledge* as Polanyi's *magnum opus*. However many well-educated and interested people who try to read the book find it enormously difficult and lay it aside long before they grasp what Polanyi could be up to in calling for and trying to craft what he terms in his subtitle "a post-critical philosophy."<sup>2</sup> With a few exceptions such as that of the physicist

Bill Scott who later went on to become one of Polanyi's biographers, many of the early reviews of *Personal Knowledge* were sharply critical.<sup>3</sup> Even in a relatively favorable review, the philosopher Michael Oakeshott had this to say about *Personal Knowledge*:

. . . Professor Polanyi's ambition to let nothing go by default, to surround his argument with embroidery, not of qualification but of elaboration, and to follow his theme into every variation that suggests itself, makes the book like a jungle through which the reader must hack his way.<sup>4</sup>

It is easy to see why *Personal Knowledge* is a daunting and perplexing book. As Oakeshott's comment implies, it is long—some 403 pages long; most of the thirteen chapters, broken into dense subsections, require very serious concentration and Polanyi includes detailed comments on an array of subjects. The thirteen chapters are grouped into four parts, and each part makes an argument, and these arguments build on each other.<sup>5</sup> Although not as daunting as *Personal Knowledge*, many of Polanyi's other books and essays are also difficult and frequently leave readers exasperated and quite unclear about the coherence of Polanyi's larger philosophical perspective. Although Polanyi's prose is often lucid, many texts have an illusive quality; their larger implications are not clear, at least to those just beginning to study Polanyi.<sup>6</sup> Many make a case in ways that seem quite odd. Perhaps especially seasoned philosophers find Polanyi strange. Polanyi was not a professional philosopher and he did not write primarily with philosophers as his imagined audience, but given the extraordinary interdisciplinarity of his discussions, it seems unlikely that specialists in any one discipline would be comfortable.<sup>7</sup>

*Personal Knowledge* as a whole, as well as most of Polanyi's other writing, weaves inseparably together three elements: broad-based critical philosophizing, broad-based constructive philosophizing, and articulation of a *Lebensphilosophie*. While it is helpful to bear in mind these interwoven elements, simply identifying

them does not make Polanyi's writing any easier. That is, to focus for a moment only on *Personal Knowledge*, Polanyi mounts an attack (part of his critical philosophizing) upon what he dubs "objectivism," although this is hardly a transparent term, especially since Polanyi's real agenda was not only to criticize some of the popular philosophical approaches of the mid-twentieth century but to attack some of the assumptions of the modern turn in philosophy beginning in the seventeenth century. Polanyi attacks some Enlightenment values, but he affirms other Enlightenment values. Therefore, grasping the contours of his constructive philosophical alternative to "objectivism" in *Personal Knowledge* is not easy.

In a general way, it is apparent that he re-evaluates the importance of skills and especially language, that he insists upon distinguishing subsidiary and focal awareness and emphasizing the person's integration of subsidiaries, and that he wants to reclaim what he dubs "conviviality" and "intellectual passion."<sup>8</sup> But it is not altogether clear (1) how such matters constitute what he calls in his book's preface a "fiduciary program" that fulfills the "task of justifying the holding of unproven traditional beliefs"<sup>9</sup> and (2) that his book is thus providing "an alternative ideal of knowledge."<sup>10</sup> And, for most readers, it is altogether confusing what Polanyi's alternative account of knowing, which is epitomized in scientific discovery, could have to do with evolutionary emergence, the topic treated in the concluding section (three chapters) of the book.<sup>11</sup> Finally, the *Lebensphilosophie* that is embedded in Polanyi's constructive philosophizing is certainly also an unsettling element for many readers of *Personal Knowledge*. His overt affirmation of personal beliefs, his emphasis on personal commitment, his sympathy for some of the views of Saint Paul and Saint Augustine, and his effort to reflect in his account of knowing a certain awe before the majesty of the unknown but intriguing universe are likely to make wary—if not alienate—readers who have absorbed many Enlightenment values.

In sum, the difficulties of *Personal Knowledge*, if not other Polanyi texts, have often understandably dimmed the enthusiasm

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of many who genuinely hoped to digest Polanyi's thought. There is, however, an array of secondary literature that anyone initially put off by Polanyi's texts should know is available. An overview as well as some detail about Polanyi's ideas can be helpful to prospective Polanyi readers. My purpose here is to review some of the best of this secondary literature, which puts Polanyi's ideas in a context and shows their scope and coherence. The first part of what follows focuses on four books written by Mark Mitchell, Richard Allen, Drusilla Scott and Richard Gelwick. These are all books clearly designed as introductions to Polanyi's thought, although they don't all seem to imagine exactly the same introductory Polanyi reader. Also the writers themselves have somewhat different interests in Polanyi and have produced introductory texts under somewhat different constraints, and these factors are reflected in their respective discussions. My review of each introduction attempts to set forth rather directly the approach taken and the interests of the author. But I also try to provide enough detail about the author's treatment of Polanyi so that anyone reading this essay can form a judgment about the depth of the account of Polanyi's philosophy. My treatment of these introductions moves from the newest to the oldest book and, in some of the notes, I alert the reader to a few other matters in the Polanyi literature that may be helpful or interesting. The final sections of this essay, following the treatment of the true introductions to Polanyi, discuss two other books by Jerry Gill and Harry Prosch. These books have some peculiarities and are not straightforwardly and simply introductions to Polanyi. But for some readers with particular backgrounds and/or interests, at least parts of these books can be used as introductions. I somewhat expand my discussion of Harry Prosch's *Michael Polanyi, A Critical Exposition* not only because it is an interesting and valuable book, but because its author was co-author with Michael Polanyi of Polanyi's final book, *Meaning*.

**The Newest Introduction to Polanyi:  
Mark Mitchell's *Michael Polanyi***

A very competent new introduction to Polanyi's thought is Mark Mitchell's *Michael Polanyi: The Art of Knowing* (2006), a readable book of less than 200 pages.<sup>12</sup> In his preface, Mitchell provides a clear and succinct summary of the themes he develops. He offers a balanced discussion of Polanyi as a broad-visioned thinker whose career as a scientist led him into the "planned science" controversy of the early twentieth century as well as into economics. Polanyi develops an account of the "necessary foundations of a free society,"<sup>13</sup> but is drawn toward study of how the modern conception of knowledge contributes to the political and moral problems of the twentieth century. Polanyi works out a new "post-critical" conception of knowledge that allows contemporaries to acknowledge the reality of moral and spiritual ideals. Mitchell suggests that Polanyi's many philosophical pursuits can all be linked to his effort to "re-establish a legitimate grounding for liberty" and thus that Polanyi is a "political philosopher who rightly grasped that liberty depends on resources beyond politics."<sup>14</sup>

Mitchell's strikingly good opening chapter provides a biographical discussion that nicely contextualizes Polanyi's life and work. He shows that Polanyi's move from medicine to physical chemistry, to economics and political philosophy, to epistemology and cosmology, has plausibility. He emphasizes that Polanyi was an outsider and that both the creativity of his contributions and the reactions to his work have been colored by this. Mitchell makes good use of the new Polanyi biography<sup>15</sup> as well as other sources, including some of the Polanyi archival material at the University of Chicago. The only quibble I have with Mitchell's biographical account is that he likely misreads Polanyi's 1919 Roman Catholic baptism as an attraction "toward an institution that could provide the resources for comprehending the moral and spiritual vacuum of Europe."<sup>16</sup> More likely, the baptism was largely the pragmatism of a young scientist fleeing Hungary for Germany, the scientific capital of the world. Polanyi, like many

other secular Jews, took the precaution of getting baptized.<sup>17</sup> But Mitchell does appropriately emphasize Polanyi's stress upon tradition and authority and his interest and sympathy for religion. Mitchell comments on Polanyi's earliest non-scientific writing in the period of World War I and on Polanyi's rise within the scientific community. At the end of his opening chapter, Mitchell sums up how he understands Polanyi's philosophical perspective: "Confronted with the alternative of Enlightenment rationalism (which has clearly failed to live up to its promises) and what has come to be called postmodernism, Polanyi's theory of knowledge neither succumbs to rationalist hubris nor retreats into the hovel of postmodern despair."<sup>18</sup>

In his seminal second chapter, "Economics, Science, and Politics," Mitchell outlines and links Polanyi's contributions in these three important areas. There is a review of Polanyi's criticisms of movements for centralized planning from the thirties forward. In a nutshell, here is Polanyi's objection to centralization: "A centralized system . . . is predicated on the belief that the central authority is capable of gathering and assimilating all available information about every aspect of the economic system and then making decisions based upon that information."<sup>19</sup> Polanyi's solution to the problem was to recognize and support "polycentricity" which is a system "that operates according to the mutually adjusting actions of independent participants."<sup>20</sup> Mitchell notes that Hayek later borrowed Polanyi's term "spontaneous order." All in all, Mitchell does a solid job of showing how Polanyi applies his thinking about polycentricity to economics. He shows how Polanyi's empirical study of the Soviet economy made clear that it did not abolish the market mechanism but merely modified it. He makes clear that Polanyi is not merely a *laissez-faire* supporter: "Polanyi was a fierce opponent of collectivism, but he was not a *laissez-faire* libertarian. On the contrary, he accused both libertarians and collectivists of being wrongly suspicious of government intervention in economic matters."<sup>21</sup> Polanyi's position is that "[c]apitalism is the only viable option, but this does not imply that the state has no role beyond enforcing contracts and

preventing fraud. On the contrary, the state can work (albeit at the margins) to ensure that the market operates as effectively as possible.”<sup>22</sup> Mitchell nicely summarizes Polanyi’s ideas about how the government might influence the money supply to affect the employment rate. This is a synthesis of Keynesian and monetarist economics that went largely unrecognized by economists of his time.

One of the most interesting discussions in this chapter is Mitchell’s account of the differences between Michael’s and brother Karl Polanyi’s views. Mitchell concisely outlines Karl’s account of modern society and the market system and then compares this with his younger brother’s views. The main difference, as Mitchell summarizes it,

lies in their respective accounts of the cause of the current crisis. . . . Karl suggested—and here we can identify Marx’s influence on his thought—that the woes of the twentieth century resulted from a faulty economic structure. These obstacles could be overcome if the right institutions were altered better to reflect human nature. . . . Michael . . . ultimately located the problem in the spiritual and moral vacuum that resulted from a deficient conception of knowing—one that denied the very possibility of spiritual and moral reality. This denial was the product of a view of reality that was both skeptical and materialistic. Michael Polanyi called this union “objectivism.”<sup>23</sup>

All in all, Mitchell, in a very few lucidly written pages, brings together in this chapter, under the rubric of “economics,” some of the most important ideas that Polanyi developed in the thirties, forties, and fifties. I would supplement Mitchell’s account in this section in only one modest respect, and Mitchell in fact does later make clear that he appreciates this point: I think it might be helpful for those unfamiliar with Polanyi to see in this early discussion the nuances in Polanyi’s discussions about liberty. Too often Polanyi’s ideas about liberty are taken to be largely the by-product of his study of economics. Certainly Polanyi’s visits to the

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Soviet Union, his attunement to Soviet oppression (particularly of scientists), and his strong “intellectual commitment to liberty motivated his long struggle against totalitarianism.”<sup>24</sup> But Polanyi’s support of liberty is also of a particular kind. Polanyi supports what he sometimes termed “public liberty,” as opposed to “private freedom.”<sup>25</sup> That is, Polanyi offers a sophisticated argument about complex social organization that Mitchell has in fact well laid out; but, as a consequence of his support of polycentrism, Polanyi is not a garden-variety libertarian opposing totalitarianism. His early writing provides a liberal vision of an evolving, pluralistic society in which human beings take on responsibility within the many specialized communities of interest like science and the law, and the work of such sub-cultural groups benefits society as a whole. This vision is an application of Polanyi’s support of polycentricity as it pertains to moral and intellectual rather than primarily economic matters. His most important insights about and commitments to liberty do not focus on private liberty or personal freedom, but emphasize the rights persons have to serve ideals and purposes preserved in specialized circles like that of science and the law in a society. The health of a dynamic society depends on the freedom that persons have to act independently on convictions that further the work of such circles of skilled persons. In fact, Polanyi’s understanding of a “totalitarian” society is bound up with his recognition of the importance of public liberty. A totalitarian society contends that it “completely represents all the collective interests of the community” and, even though it may allow private freedoms, it rejects the “claims of individuals to act independently for the benefit of society.”<sup>26</sup>

Mitchell does make these more subtle points (that flesh out Polanyi’s notions of liberty) somewhat clearer in a later section of his second chapter that is devoted to showing how Polanyi’s ideas about polycentrism yield a certain vision of science:

The kind of society Polanyi describes is not one in which individuals are at liberty to do anything they please so long as they do not infringe upon any other individual’s freedom to do the



same. This is an inadequate foundation to support the supervisory structure required for the continuation of either science or a free society.<sup>27</sup>

In science, Polanyi argues that “individual freedom is restrained by an authority that is created by the practitioners themselves but it is ultimately rooted in a common commitment to transcendent ideals . . . .”<sup>28</sup> In Mitchell’s general portrayal of Polanyi’s account of science, he emphasizes how and why Polanyi resisted the pervasive centralizing ideology of the mid-twentieth century. This ideology “was rooted in a materialist vision of the world, a world conceived completely in terms of cause-and-effect relationships”<sup>29</sup> that Polanyi did not accept. Polanyi saw through the movements aimed at “reducing science to applied science,” recognizing that this would be “the end of science as we know it”<sup>30</sup> and effectively the end of the cultivation of knowledge. Mitchell stresses Polanyi’s appreciation for tradition and authority in science, and it is the rejection of these that “gave rise to the ideal of explicit, objective knowledge”<sup>31</sup> which came to be revered in the science and philosophy of science of Polanyi’s day. Polanyi’s account of science and society is one that emphasizes how important are the commitments of participants to transcendent ideals such as truth and justice. Mitchell makes clear that Polanyi portrays the scientist as a person of conscience and as one not so much who applied a “method” as one who can see and solve problems. Polanyi links such skilful discernment with perception. In sum, Mitchell’s seventeen-page discussion of science incisively covers Polanyi’s major themes. He makes much use of some of Polanyi’s essays written from the mid-thirties until the publication of *The Logic of Liberty* in 1951. This is important material, and it is true that Polanyi’s ideas about the organization of science and the delicate relation of the scientific community to the larger political culture did not change much after World War II.

The final section of Mitchell’s important second chapter is titled “Politics”; discussion here turns from Polanyi’s account of science per se to Polanyi’s broader criticism of the development

of modern ideas and the political fallout these ideas have yielded in the twentieth century. Mitchell clearly sets forth Polanyi's account of the moral and political implications of objectivism, showing how the turn to modern philosophical suppositions ultimately leads to what Polanyi calls "moral inversion," which is a "combination of skeptical rationalism and moral perfectionism."<sup>32</sup> Moral inversion succors nihilism; according to Polanyi, its impact has been devastating in modern life. Unlike Europe, Britain and America to some degree "escaped the frenzied passion produced by moral inversion"<sup>33</sup> because political life muddled along in practice following established traditions and ignoring the consequences of theoretical views that took root in modernity. Polanyi's philosophy, in Mitchell's words, calls for and provides the philosophical ground for "a recovery of balance between man's moral demands and his critical powers."<sup>34</sup> The philosophical grounding for such a recovery required hammering out a new vision of the nature of knowing. In sum, in the final component of his second chapter, Mitchell nicely complements his earlier discussion of Polanyi's ideas about economics and science. He deftly summarizes Polanyi's critical philosophical conclusions about the development of modern ideas and their violent consequences.

Mitchell next turns to Polanyi's epistemology as the heart of his constructive philosophizing. The discussion here is broken into ten sections. Polanyi recognized that belief was the foundation of knowledge and that a proper understanding of liberty also required understanding how foundational belief was. His Gifford Lectures and the book that grew out of these lectures, *Personal Knowledge*, make his case for the priority and importance of belief; this is what Polanyi called "the fiduciary programme,"<sup>35</sup> and it is woven seamlessly with the philosophy of commitment that he articulates. Out of his interest in belief and commitment grows a richer understanding of what Polanyi later called the "structure of tacit knowing."<sup>36</sup> The sections in Mitchell's chapter are meant to mirror this development in Polanyi's ideas. First there is a discussion of what Polanyi draws from Augustine, the

recognition of the “indispensable role belief plays in all knowing.”<sup>37</sup> But according to Mitchell, “while Polanyi embraces an Augustinian approach to epistemology, he is decidedly non-Augustinian in his view of social progress.”<sup>38</sup> Next Mitchell turns again to tradition and authority, matters that he has already emphasized in earlier chapters. But in this epistemological discussion, he wants to make clear that tradition for Polanyi is not static; there is “an orthodoxy that enforces a kind of discipline on those subject to the tradition; but the orthodoxy is a dynamic one in that ‘it implicitly grants the right to opposition in the name of truth.’”<sup>39</sup> This well-turned phrase that incorporates one of Polanyi’s most eloquent comments shows that Mitchell has an eye for Polanyi’s most concise and clear statements; he puts them to excellent use here and throughout his book to summarize major themes. Mitchell emphasizes how tradition is always linked to a community that embraces and passes forward valued practices and ideals: “. . . knowing requires the existence of a society committed to a particular tradition and engaged in passing it on.”<sup>40</sup> He carefully lays out Polanyi’s integrative model of tacit knowing, showing its roots in Gestalt ideas.<sup>41</sup> Knowers dwell in subsidiary particulars in order to attend to a more comprehensive focal target; Polanyi regards the comprehensive entity as an achievement that is an integration of tacitly known particulars or subsidiaries. Mitchell sets forth a classification of six kinds of examples of tacit knowing that Polanyi gives in his writing, and he explains the four aspects of tacit knowing that Polanyi discusses in *The Tacit Dimension*. He carefully reviews Polanyi’s claims about indwelling and extending the body and participation in knowing. In sum, the nine-page discussion in the subsection titled “Tacit Knowing” is a good concise summary of the central elements of Polanyi’s theory of knowledge.

In the sections at the end of his third chapter, Mitchell rounds out his account of Polanyi’s epistemologically grounded perspective by briefly discussing some topics and themes that, unfortunately, are sometimes overlooked. He tries briefly to explain Polanyi’s particular brand of philosophical realism, which does

not fit comfortably with most modern discussions of philosophical realism.<sup>42</sup> Mitchell notes that Polanyi's realism has been an element of his thought much discussed by scholars. His discussion is sensibly organized around four points about which there will likely be general agreement. Mitchell does a particularly good job of conveying Polanyi's sense of

the infinite richness of reality. The richness of the real produces unexpected manifestations. Because we are finite, we will never reach the core of reality, a reality that presents us with infinite possibilities. The process of knowing presents us with continual surprises.<sup>43</sup>

In his subsection titled "On Embeddedness," Mitchell makes clear Polanyi's conviction that to be human is to be grounded in a particular language used in a particular culture in a particular historical context. Human knowers have no access to Archimedean points of view.<sup>44</sup> While our finite embedded nature marks our limitedness, it also marks the opportunity for our achievement. In the final two sections of his third chapter, Mitchell shows how, from a Polanyian perspective, the subjective-objective and fact-value dichotomies that so readily spring to mind for most moderns are not tenable. He discusses briefly the importance of intellectual passions and what Polanyi called "universal intent."<sup>45</sup> Mitchell shows how Polanyi's model re-conceives the nature of knowing and shifts the discussion of the nature of truth and meaning:

By eliminating the distinction between facts and values, Polanyi sought to reestablish the possibilities for humans to embrace with confidence such values as truth, beauty, and justice. These are not merely subjective preferences; they are ideals to which we may personally commit ourselves in the belief that they are truly meaningful, for they bear on intangible reality.<sup>46</sup>

In "Meaning, Morality, and Religion," Mitchell moves from Polanyi's fundamental claims about knowing to a broader discus-

sion of the implications of these claims. Clearly Polanyi is not a materialist, but a figure whose goal “in formulating a new account of knowing was to reintroduce the possibility of making meaningful truth claims, about nonphysical reality.”<sup>47</sup> Polanyi reopens the door for conversations about moral ideas, aesthetics, and religion. Mitchell does a nice job of summarizing Polanyi’s criticisms of modern reductionism and of sketching out Polanyi’s multi-level conception of reality. He sorts carefully through some of Polanyi’s confusing terminology (dual control, boundary conditions, etc.) and Polanyi’s ideas about the hierarchical structure of comprehensive entities. In one of his subsections, he makes an interesting attempt to sketch out a moral theory, something Polanyi did not do but something Mitchell argues is implicit in Polanyi’s writing. Moral ideas and practices are like other ideas and practices: “we come to accept moral teaching, like any other body of skillful knowing, by entrusting ourselves to a moral tradition or teacher in a process that is often referred to as interiorization.”<sup>48</sup> Moral ideas are products of a person’s tacit integrations; while they are not arbitrary, they are tied to a tradition and a community. They are intangibles more real than most tangibles. Moral ideas function as largely unspecifiable subsidiaries that inform human judgment and they have indeterminate future manifestations. New values in both science and culture do emerge when human beings struggle to understand reality more deeply and their moral ideas subtly shift.

There is a lengthy discussion in this chapter of Polanyi’s ideas about religion. Mitchell is a fair-minded scholar (an important virtue, according to Polanyi) who acknowledges that this is terrain on which there has been much conflict in Polanyi scholarship. His book is an introduction and he intends primarily to reference rather than explore some of the debated questions. Perhaps because Polanyi’s philosophical ideas seem early to have attracted the attention of Christian theologians (a group more open to criticism of the modern philosophical tradition), writing about Polanyi’s religious ideas and his religious affiliations (or lack thereof) became a virtual cottage industry. Mitchell is aware

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of much of this discussion, which I treat below in discussions of other books. It is certainly the case, as Mitchell stresses, that Polanyi's ideas about religion as well as other topics were importantly shaped by his friend J. H. Oldham and Oldham's circle of friends, who had great interest in Christianity and Christianity's role in the world emerging after World War II. Polanyi's post-critical ideas were in part shaped through his participation for about twenty years in Oldham's discussion groups. As Richard Gelwick has pointed out, Polanyi credited his participation in Oldham's groups as second only to his experience as a scientist in shaping his thought.<sup>49</sup> It is also certainly true, as Mitchell emphasizes, that Polanyi's post-critical philosophical perspective is open to, and interested in, religious realities and religious truth in a way that most modern philosophy is not. One only has to look at the end of *Personal Knowledge*, *The Tacit Dimension*, some late Polanyi essays, or the late book *Meaning*, written with Harry Prosch, to see that Polanyi seems to have anticipated a religious renaissance. It is often, however, not clear precisely what Polanyi is saying about religion in many texts (and opinions of interpreting scholars have varied), and it is not clear that there is consistency among the different texts; it seems that Polanyi often preferred to hint at rather than thoroughly expound his ideas about religion in the way he did on some other topics.<sup>50</sup> While Mitchell's general comments on Polanyi's ideas and religion are balanced, in my view he relies too much on what the Christian theologian Thomas Torrance had to say about Polanyi's religious commitments and religious ideas. Some of the things Torrance has said about Polanyi and his religious commitments and ideas seem largely to be self-serving. Some of Torrance's comments about Harry Prosch's collaboration with the aging and increasingly senile Polanyi on his last book *Meaning*, as well as Torrance's claims about his appointment as Polanyi's literary executor, do not fit with the historical record. While these may be small matters in an introduction to Polanyi's thought, those who read Mitchell's account should be keyed to the fact that there is more to the story about Polanyi and religion than Mitchell lays out here, although

he does do a credible job of referencing some important parts of the scholarly discussion.

The section in Mitchell's chapter titled "Religion in *Personal Knowledge*" works through Polanyi's cryptic comments about religion in his *magnum opus*. This is something that other scholars have also tried to sort out.<sup>51</sup> Mitchell does quote and comment helpfully upon some of the striking Polanyi lines about religion that always attract the attention of readers new to *Personal Knowledge*. He nicely summarizes Polanyi's discussion of differences in verification and validation and Polanyi's ideas about levels of participation vis-à-vis types of real known objects. For my taste, Mitchell's occasional attempts in his discussion to explain Polanyi's views by analogs with C. S. Lewis's views are of limited value. Polanyi was not a conservative Christian, and readers should be very clear about this. Mitchell's short section titled "Faith and Reason" picks up themes noted earlier in his discussion of Polanyi and Augustine: "Polanyi seeks to restore faith to its proper place by showing how it is central to the knowing process."<sup>52</sup> The final discussion in the "Science and Religion" subsection returns to implications of Polanyi's stratified ontology. Mitchell does a nice job of showing how Polanyi weaves together his antimaterialistic metaphysic, his cosmology, and his *Lebensphilosophie*:

Life is an achievement. Human life—characterized by consciousness, curiosity, creativity and moral responsibility—represents the apex of this achievement. Bound up within the meaning of human existence is our duty, as individual centers of thought and responsibility, to employ our faculties to live lives worthy of our cosmic calling.<sup>53</sup>

Mitchell's final chapter, "Engaging Polanyi in the Twentieth Century and Beyond," moves from the overview of Polanyi's thought to a brief comparison of Polanyi's views and those of three contemporaries: Michael Oakshott, Eric Voegelin, and Alasdair MacIntyre. These three have some affinities with Polanyi

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or make some use of Polanyi, and all three are, like Polanyi, deeply interested in the politics of the twentieth century and the cultural roots of politics. Certainly, for the reader seeking an introduction to Polanyi who also knows something about any one or all of these figures, this discussion might be a helpful bridge. Readers unfamiliar with any of these thinkers can perhaps skip this section, although there are in Mitchell's discussions some generally interesting wrinkles. Mitchell, for example, comments on Polanyi's correspondence with the recently deceased William F. Buckley Jr., and Polanyi's hesitancy to see much that paralleled his ideas in American conservatism. Mitchell does a particularly good job in his discussion of MacIntyre and Polanyi in showing that Polanyi's ideas are closer to those of MacIntyre than MacIntyre thinks. At the end of this chapter, Mitchell concludes with a brief final discussion outlining how Polanyi's ideas in the new century can "help move us beyond both Enlightenment rationalism and postmodern skepticism."<sup>54</sup> This discussion is one of the most interesting sections of this introduction to Polanyi because here Mitchell moves somewhat beyond Polanyi, but in a way that is consistent with Polanyi's thought. Mitchell suggests, for example, that "philosophical materialism provides the psychological and spiritual license" for the consumerism of the contemporary American society and that "in such a milieu, fidelity to one's home or community is eroded by the primary value of acquisition."<sup>55</sup> He discusses the ways in which contemporary society often is self-indulgent and relativistic in orientation and how far this falls from Polanyi's vision for humanity in which "liberty must ultimately be in the service, not of trade, but of transcendent ideals."<sup>56</sup> At least to this reader, such claims seem to be on the Polanyian mark.<sup>57</sup> I look forward to Mitchell's future scholarly efforts to dwell in Polanyi's philosophical framework in order to extend the contours of post-critical thought. In sum, *Michael Polanyi* is a very solid introduction to Polanyi, one that probes in a sophisticated manner the breadth and depth of Polanyi's thought.



### The Briefest Introduction: Richard Allen's *Polanyi*

Richard Allen is an articulate British Polanyi scholar who has written or edited many things on Polanyi's philosophy.<sup>58</sup> In 1990, Allen published an introduction to Polanyi's thought, titled simply *Thinkers of Our Time: Polanyi*, which is part of the Thinkers of Our Time series published by the Claridge Press.<sup>59</sup> Certainly, this is the briefest of the introductions; Claridge Press strictly limits authors in the series to 25,000 words. Although it is dense in some sections, this is an introduction that can be quickly read. Quite sensibly, one reviewer has suggested Allen's *Polanyi* might also serve as an introduction to other introductions.<sup>60</sup> Allen has acknowledged that he did not have space to treat as thoroughly as he would have liked the social and political aspects of Polanyi thought.<sup>61</sup> Nevertheless, because the major part of Allen's discussion focuses on the argument of *Personal Knowledge*, Polanyi's longest and most complex book, this short introduction could be especially useful to a reader working with this text.

Allen begins by commenting on the fact that Polanyi was not a professional philosopher but a talented scientist who took up philosophy to protect science in a period when Marxist influenced ideas about planned science were popular. He argues that Polanyi "found current thinking about science and freedom inadequate."<sup>62</sup> In *Personal Knowledge*, Polanyi's target was objectivism, "the assumption that knowledge must be a function of the observed object alone, and that any personal shaping of his knowledge by the knower renders it 'merely subjective'." He sought to show that knowledge is and must be a personal achievement.<sup>63</sup> Allen follows with a straightforward list of six "dangerous errors that have infected modern thought since Galileo and Descartes."<sup>64</sup> His unembellished list, of course, includes the same items (reductionism, unwarranted confidence in the method of doubt, etc.) that most of the other introductions treat at greater length. Allen includes a five-page biographical statement that also identifies the topics treated in Polanyi's major books. He provides, as well, a very succinct statement about how Polanyi's philosophy is unlike most contemporary philosophy.

For readers whose expectations are shaped by familiarity with contemporary philosophy, this brief discussion may be helpful.

After this introduction, Allen's second chapter succinctly lays out the parts in *Personal Knowledge* that I earlier called Polanyi's critical philosophizing, that is, the claims against objectivism understood as "the source of our specifically modern ills and as that which has derailed humanitarian ideals and attempts at their realisation."<sup>65</sup> Allen provides a four-element characterization of objectivism and then, in about ten pages, he summarizes the arguments that Polanyi uses to counter each element.<sup>66</sup> Some elements are also treated further in later chapters. The third chapter turns to a summary of Polanyi's "alternative account of knowledge as a personal achievement."<sup>67</sup> In a very compact fashion, Allen here sets forth Polanyi's theory of tacit knowing. He manages to cover a remarkable number of Polanyi's ideas in very few pages and even suggests a few comparisons with other philosophers. The fourth chapter, "The Fiduciary Programme," treats Polanyi's account of belief as the root of knowledge, a claim that puts Polanyi directly at odds with much (but not all) of the Western philosophical tradition. Allen shows how Polanyi de-emphasizes doubt and emphasizes commitment; "post-critical" philosophy is a "presuppositional approach"<sup>68</sup> that begins with belief and acceptance of our social-cultural framework as the conditions marking our calling "to achieve the universal obligations to which we are subject."<sup>69</sup> In "Comprehensive Entities and Complex Performances," Allen summarizes Polanyi's ontological and cosmological ideas. He shows how Polanyi "reinstates the ancient conception of degrees of reality and does so in a direction contrary to that of Reductionism, which assumes the more tangible to be the more real."<sup>70</sup> He outlines Polanyi's arguments concerning the two levels of control in comprehensive entities and sketches Polanyi's interesting account—countering C. P. Snow—of the complementary domains of human inquiry, running from the hard sciences to dramatic history. He provides a succinct summary of Polanyi's discussion of evolution as an achievement and shows that Polanyi's image of the universe as

multi-level is a stark contrast to the reductionism often promulgated in modern and post-modern culture. In his penultimate chapter, Allen treats Polanyi's political philosophy and his interest in modern problems of meaning. Polanyi's political philosophy emphasizes that "a free society needs a commitment by its members to truth and a mutual respect for each other's self-dedication."<sup>71</sup> Although his comments are very few, it is clear in his remarks on Polanyi and the problem of meaning that Allen, like the writers of almost all of these introductions, is especially interested in religion and theology. Allen hints at a few criticisms of what he takes to be Polanyi's overly this-world account of religion. At the end of Allen's book is a two-and-a-half page orientation (now somewhat dated) to Polanyi scholarship and a brief bibliography. He comments on books and authors who have written about Polanyi or who have applied Polanyi's post-critical perspective.

Although my overview of Allen's book, like the book itself, has been concise, the reader should not conclude that this introduction is a second-class effort. It is simply a very tightly wrought introduction, and perhaps no Polanyi scholar is better able to be brief than Richard Allen. Of course, the contrast is sharp between, for example, a loquacious introduction like that of Drusilla Scott, who projected a modern "everyman" as a reader, and Allen's book, whose publisher projected an audience with no time for details. Allen's *Polanyi* is a very basic orientation to Polanyi's post-critical perspective, and that is just what this Claridge Press series intended.

**Michael Polanyi and Common Sense:  
Drusilla Scott's *Everyman Revived***

The late Lady Drusilla Scott met Michael Polanyi in 1960 and became a friend in the last sixteen years of his life; she was a leader in the British Polanyi-studies group Convivium (now merged with the largely North American Polanyi Society) that published a small journal (of the same name), which often featured her insightful reflections on Polanyi's philosophical work. Her book,

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*Everyman Revived: The Common Sense of Michael Polanyi*, was first published in 1985 by the Book Guild. After it went out of print, it was reprinted by Eerdmans in 1995 and is still readily available.<sup>72</sup> This is the most down-to-earth introductory book, providing an overview of Polanyi's ideas. Scott is perhaps the Polanyi interpreter most attuned to the difficulties of reading Polanyi. As she says, "Polanyi is advocating such a U-turn in accepted ways of thinking that the experience of reading him can be disorienting."<sup>73</sup> Scott writes clearly, is imaginative (but sometimes digresses), and her informal prose often aims to be witty. She says in her preface that she tried to "introduce some of his main ideas as simply as possible so as to show their value and meaning in today's world"; those who are *Everyman's* heirs, who now "urgently want some light on the real world, should claim Polanyi as our philosopher."<sup>74</sup> Scott thus links Polanyi's views with the recovery of common sense, which was one way Polanyi himself discussed his philosophical objectives. Scott's book has a certain British charm and is full of illustrative stories; she draws skillfully not only from the play *Everyman*, but from a wide range of contemporary writers—philosophical, scientific, and literary.

Her opening chapter, "The Power of Ideas," makes the case that Polanyi valued ideas and came to believe that a misunderstanding of science, woven with a particular modern philosophical and cultural narrative, led to the violence in the twentieth century that Polanyi knew firsthand. Scott discusses Polanyi's notions about a "disastrous dissonance"<sup>75</sup> at work in modern culture, which combines extreme critical lucidity and an intense moral conscience to produce nihilism. Polanyi argued that the hope of early Enlightenment ideas got lost as later generations succumbed to a materialist outlook obsessed with objectivity. Scott traces the development of Polanyi's understanding and criticism of modernity in terms of his own experience as a *fin de siècle* Hungarian-born, refugee research scientist who eventually turned from physical chemistry to economics, social science, and philosophy as he sought to understand his own culture. There is a rather good short biography in this chapter that shows how

important problems and conclusions for Polanyi are set by his personal experience. With verve, Scott introduces Polanyi's themes and weaves these into a story of his experience, carefully choosing quotations from various Polanyi writings to make her case eloquently, as she often also does in succeeding chapters.

Each chapter after the first begins with a few italicized sentences that link the chapter's discussion to the characters in the medieval play *Everyman* and that provide a summary of what the chapter explores in Polanyi's philosophy. Although, as a reader, I was at first puzzled by this section, I came to appreciate this succinct way in which Scott focuses her discussion. The second chapter is a brief plunge into the history of modern ideas (some of which were touched on in the first chapter) that sets forth more concretely the problematic that Polanyi addresses in his philosophy. This chapter also focuses more directly on the main trope used in this book: Scott employs the story in *Everyman* as an envelope within which to present a reasonably well-rounded account of Polanyi's philosophical perspective. This old play still has an "emotional force" today because it is an "agonized search for values that can stand and endure in the face of suffering and death"; it is a play about "the urgent need of man to know something sure about the meaning of his existence . . ."76 Scott's comparison focuses on the old authoritarianism of the Roman Catholic Church and the similar new authoritarianism of scientism (i.e., the misread tradition of science) which systematically undercuts the person as a skilled and responsible holder of knowledge at home in the world. Polanyi's work was to re-equip human beings to trust their own faculties, which the era of critical thought has taught them to distrust. The liberation of the early critical era brought a new authoritarianism which included "the rift between Knowledge and Everyman."<sup>77</sup> The picture of the world and the person that developed from the seventeenth to the twentieth century was one in which mind and matter were split and ultimately the motion of matter was what counted. What evolved was "a picture of the universe as a vast assembly of atoms moved relentlessly on its path by impersonal inevitable forces,"

and this picture “seized the imagination of man and dominated it.”<sup>78</sup> Therefore, when “Knowledge turned her cold and analytic eyes on to Everyman, and saw that he too was part of the world of matter, made of atoms, obeying the same laws as the planets, she could not recognize her sister Good Deeds nor her friend Everyman.”<sup>79</sup> Scott’s reading here of the development of the history of ideas is not a close reading, but she provides a creative and concise sketch of Polanyi’s critique of modern culture against which Polanyi’s constructive philosophical ideas began to develop. Polanyi “set about building a truer picture of how Everyman knows his world, how he can justify his claim for the validity of ‘personal knowledge,’” and this makes a great difference “in bringing hope, reality and responsibility back to Everyman.”<sup>80</sup>

After the introduction of Polanyi and Polanyi’s cultural criticism in the first two chapters, Scott turns in the next three chapters to an elaboration of the constructive themes in Polanyi’s thought that counter the prevailing cultural narrative. The third chapter focuses on discovery as the paradigm case in Polanyi’s model of knowing and the key to his understanding of science.<sup>81</sup> Scott here introduces the process of scientific research in terms of the pursuit of intellectual beauty, which she portrays as a reinstatement of Beauty in Everyman’s world.

Discovery is the most illuminating element in science, yet it has been ignored by philosophy of science. However, Polanyi—himself a practicing scientist—made discovery central. Scott’s discussion of discovery unfolds as a brief comparison of the views of Bertrand Russell and Karl Popper with the ideas of Polanyi. Russell focused on observation, deduction, and induction, while Popper relegated the creative element in developing scientific ideas to psychology and focused attention on questions of validity. Polanyi, however, emphasized first the matter of choosing a good problem (which relies upon highly personal skills of seeing). Polanyi also assigned importance to intellectual passions, imagination, and the discoverer’s “dim sense of direction,” which is guided by “intimations of reality, indicated by scientific beauty.”<sup>82</sup> Scott provides a fair summary of Polanyi’s account of discovery

seen starkly against the backdrop of Russell's and Popper's views. There is perhaps a bit too much effort in her discussion to link Polanyi's ideas with a popular book of the eighties, Robert Pirsig's *Zen and the Art of Motorcycle Maintenance*. Readers today will likely not know Pirsig, and I don't believe Pirsig ever truly had a grasp of many of the issues that Polanyi sought to address. However, with her many examples from other writers, Scott does show that other thinkers share Polanyi's view of the importance of discovery. Finally, included in this review of Polanyi's perspective on discovery is a succinct but lucid summary of Polanyi's interesting effort to show the difference between accounts of discovery in modern science from before and after the act of discovery.

The fourth chapter, titled "Tacit Knowing," follows from the extended discussion of discovery as the central puzzle of science. Because discovery is central to knowing, it is necessary to reconceive the nature of knowledge and the knowing process. As his philosophical ideas matured, Polanyi developed such a reconception which he eventually called the theory of tacit knowing. Scott lays out the main parameters of the theory, which she portrays as "the rehabilitation of Five Wits."<sup>83</sup> Not all knowledge is explicit, exact, and testable, Polanyi argues, but all that is explicit, exact, and testable relies upon tacit elements used by a knower to attend to what is of interest. By carefully discussing skills, Scott shows how Polanyi broadens and reworks the traditional understanding of acquiring and holding knowledge. She discusses Polanyi's interest in the practical, skillful, and bodily elements of all knowing by reinterpreting Gestalt ideas and part-whole dynamics:

We focus on the whole by not attending to the parts, or as Polanyi says by attending *from* them *to* something else which is their joint meaning. We integrate the parts into the whole not by a reasoning process but by a sort of bodily skill, which is so much part of our make-up that we are usually not aware of it—you don't think of it as a skilled performance when you recognise your child among a crowd!<sup>84</sup>

Scott ably shows how Polanyi binds together perception and other kinds of knowing and how tacit knowing in human beings is linked to the capacities of other animals and to evolutionary history. Seen against the standard account of knowing, Scott thus summarizes the nature of Polanyi's personal knowledge: "There is then no finished certainty to our knowledge, but there is no sceptical despair either. Through all our different kinds of knowledge there is a reasonable faith, personal responsibility and continuing hope."<sup>85</sup>

"Reality," Scott's fifth chapter, sets forth the several important aspects of Polanyi's metaphysical realism. Against the backdrop of a positivistic view of science, Polanyi reasserted that "science progresses by guessing at aspects of reality indicated by clues in what is seen and heard, just as we guess that certain sounds indicate the presence of a real burglar and go to look."<sup>86</sup> Polanyi's realism is commonsensical, but, more importantly, it focuses attention on the knower's commitments, passions, and tacitly held skills. Polanyi repudiated an impersonal and rule-bound method as the path to discovery, and instead developed a portrait of the scientific discoverer as a responsible, committed person, making full use of tacit powers. Doubt, Polanyi argued, is not the royal road to truth, but responsibly held belief, which one puts forth with universal intent, serves as the key to all human understanding of reality. However, Polanyi's notion of "reality" is not a simple notion that focuses on tangibility: "we recognize something as real because it draws us on, makes us feel an obligation to search and discover, rewards us by revealing more and unexpected but recognisable meaning."<sup>87</sup> Minds are, for Polanyi, more richly real than cobblestones, and we can know rich realities only by deeply dwelling in their particulars. As Scott puts it, Polanyi's "idea of *indwelling* gives a firmer outline to the idea of *commitment*. If we indwell in the clues we perceive, using them as an extension of ourselves and a tool for discovering more, we have to commit ourselves more to them."<sup>88</sup> All in all, Scott's seamless discussion of the several components of Polanyi's realism is one of her best chapters.

Scott follows chapter 5 with "Truth and the Free Society," a



discussion that complements her chapters on discovery, the theory of tacit knowing, and Polanyi's metaphysics. She outlines Polanyi's broader account of the operation of the larger scientific community situated in a free society. Polanyi was an astute and articulate scientist who recognized the social aspects of science. Particularly those influenced by early Polanyi texts like *Science, Faith, and Society* sometimes see Polanyi as an early sociologist of science. Although I, like Scott, think this is an inadequate description of Polanyi's approach, it is true that Polanyi carefully laid out an account of the scientific endeavor as a cooperating community of independent researchers pursuing truth. Polanyi's examination of science emerged in the thirties and forties against the backdrop of Marxist-influenced movements to plan science. Scott skillfully sketches how Polanyi emphasized the independence of the scientist and the authority of scientific opinion operating across the many neighborhoods of science. She lays out Polanyi's view of how professional standards operate within science and how what Polanyi later called "conviviality"<sup>89</sup> provides a necessary but often overlooked element in the scientific community which is committed to the exploration of an unfolding reality. She ably summarizes Polanyi's account of science as a global self-governing "form of spontaneous organization,"<sup>90</sup> an organization that in early modernity had to reject the authority and tradition of the church but now has (and should acknowledge) its own indispensable tradition. All of these broader social themes in Polanyi's thought come together in a circumspect discussion in Scott's chapter.

What Scott does less convincingly in chapter 6 is show concisely how Polanyi's vision of the scientific community also yielded what he regarded as a liberal vision of society grounded in certain notions of freedom. There is no doubt that Scott appreciates the larger political philosophy Polanyi articulates, as shown by her discussion of Polanyi's reflection on the important role of a rich variety of independent associations in the state. But she might have here discussed Polanyi's notions about "public liberty" and "transcendent ideals" as a way quickly to get to the heart of his political vision. Her comparison of the evolution of scientific

views and legal precedents is helpful, but I expect that many readers will find strained her extended effort to compare Puritan ideas about liberty of conscience and what she regards as Polanyi's sense of the "scientific spirit."<sup>91</sup> Also disconcerting at the end of this chapter is the several-page retelling and analysis of the story in Selma Langerlof's novel *Jerusalem*. Scott construes the story to be about "moral discovery"<sup>92</sup> and "moral community,"<sup>93</sup> but most readers are apt to find it a long stretch to see this story as an analog pulling together Polanyi's "account of how scientific discoveries are made, and how they relate to the tradition and authority of the scientific community."<sup>94</sup>

Scott's seventh chapter, "Moral Inversion and the Unfree Society," circles back to explore in more depth Polanyian themes concerned with the destructive currents in late modern culture, themes introduced in the opening two chapters. Polanyi's analysis of the troubled modern mind pointed to the fusion of two kinds of convictions: from a misleading theory of knowledge that came with the rise of modern science, we inherited a far-reaching skepticism that undercuts all moral ideas and judgments; but eighteenth-century scientific rationalism also brought a "giant wave of man's unlimited moral aspirations which, turned from its Christian channel, poured like a destructive torrent through the channels of rationalism."<sup>95</sup> Scott rightly emphasizes how Polanyi again and again in his analysis of late modern culture hammers home his conclusions about the explosive, destructive impact of this combination of extraordinary contempt for moral values and excessive moral passions fueling a Utopian perfectionism. She outlines Polanyi's case that England and the United States were spared the full impact of "moral inversion" because there "the inversion is limited to vocabulary and logic but not put into practice; men talk a language of materialism, behaviourism, value-free sociology or utilitarianism, and yet continue in practice to respect the principles of truth, justice or morality which their vocabularies anxiously deny."<sup>96</sup> Scott then reviews Polanyi's numerous criticisms of Marxism and Soviet institutions and practices. She ends this chapter with an analysis of a speech by a

British foreign secretary who typifies what she regards as the muddled moral, epistemological, and metaphysical ideas underlying late-twentieth-century British policies. Scott tries to refine and update some of Polanyi's cultural criticism but she gets somewhat carried away with her analysis of the British foreign secretary's speech; she sometimes sounds much more conservative than Polanyi himself.

Polanyi held that scientism often misrepresented complexity for it contended that ultimately everything, including the human being, could be exhaustively described in terms of physical and chemical laws. In her eighth and ninth chapters, Scott summarizes and applies Polanyi's case against this and other forms of reductionism. Polanyi countered a one-level mechanical account of entities with a hierarchical view that emphasizes how higher level principles of organization operate in margins left open by lower levels of control. Lower levels of control determine the conditions of success and failure in an entity, but they do not control the nature of higher level principles that can come into play. Polanyi used this hierarchical account not only to counter what he regarded as the reductionism of behaviorism but also to criticize Neo-Darwinian arguments that focus too narrowly on variation and selection. Polanyi contended that discussions of evolution needed to make a place for the emergence of greater organizational complexity from the margins left open by lower levels of control. Ultimately, Polanyi held that a theory of evolution that cannot account for the emergence of human beings who are creatures inquiring about evolution is a failure. Polanyi tried to link the structure of evolutionary emergence with his account of tacit knowing. He makes a case that his understanding of the hierarchical structure of entities is a parallel to his account of knowing in terms of subsidiary and focal elements. These matters are the most difficult elements in Polanyi's philosophical perspective. Scott does a reasonably good job (although sometimes I think she makes things too simple) in summarizing the main ideas in this difficult terrain. She does a better job in her ninth chapter, "Mind and Body," where she presents Polanyi's criticisms of behavior-

ism and his effort to institute a starting point for philosophical reflection that does not accept an unbridgeable ontological chasm between mind and matter. Here she introduces some of the discussion in the sixties between Polanyi and Marjorie Grene, Polanyi's closest philosophical supporter after 1950, but also one of his best critics.<sup>97</sup> Although Polanyi disagreed, Grene thought Polanyi's eagerness to defeat behaviorism led him back to a mind-body dualism. There are a number of things that Polanyi scholars have debated and still debate; Scott's discussion of this topic of debate should be interesting to even those readers using Scott's book to locate the general contours of Polanyi's philosophical perspective.

From discussions in earlier chapters, Scott pulls together in her tenth chapter a rich description of Polanyi's account of a person. She argues that in Polanyi's reinterpretation of science, centered on discovery, there is a recovery of the person as more than material and mechanical: "Polanyi's ideas of tacit knowledge and the many-level world transform the possibilities for recognising persons in their full humanity, without rejecting the scientific knowledge of the physical world."<sup>98</sup> Polanyi's person is an engaged, changing, and unique figure grounded in the natural and historical world; Polanyi gives us an account that "extends biology into theory of knowledge."<sup>99</sup> Polanyi's person is an inquirer, one who dwells in in order to break out, a responsible figure that makes choices, respects the achievements of all living things, and accepts kinship with them: "Polanyi set human personhood in a cosmic perspective of evolution, seen as emergence and achievement."<sup>100</sup>

The final two chapters of Scott's book, although interesting, are likely of limited value to readers seeking a basic introduction to Polanyi's ideas. These chapters do treat some themes in Polanyi's writings, but they are a rather indirect discussion. The eleventh chapter, "The Poet's Eye," begins with a comparison between the literary critic F. R. Leavis and Polanyi, and then introduces Polanyi's late writing treating symbol, metaphor, art, myth, and religion, which is the main topic. Certainly Scott is right

in pointing out that late in life Polanyi tried to extend his earlier philosophical ideas to say more about meaning that he regarded as related to but somewhat different than meaning in science. She says Polanyi's argument was "sometimes ambiguous and not entirely convincing"; yet she thinks Polanyi's efforts to identify a "special sort of truth"<sup>101</sup> are interesting and important. This launches her discussion of Polanyi's misreading of Coleridge's claim that appreciating art requires the willing suspension of disbelief. She argues that Polanyi has pulled Coleridge's idea out of context; what Coleridge has in mind is actually close to what Polanyi pointed to in analyzing the meaning of poems, works of art, myth, ritual, and religion as requiring "transnatural" integrations; such artifacts are marked by "incompatible" particulars.<sup>102</sup> Scott outlines some of the distinctions that appear in *Meaning*, co-authored with Harry Prosch, about meaning-making in these domains that Polanyi tried to work out in the last years of his life. In the last section of the chapter, there is an extended comparison of Polanyi's life and developing outlook and that of Wordsworth. Both took on a mission to "'unstop our ears' and save us from the crippling restrictions"<sup>103</sup> of an overly critical and analytical philosophy. Scott contends what "Polanyi worked out intellectually Wordsworth worked out poetically."<sup>104</sup> In this discussion, Scott shows that she is a sensitive Wordsworth reader; but, in the final analysis, Polanyi is not comparable—at least to this Polanyi reader—to an English Romantic poet.

The concluding chapter of Scott's book, "A Meaningful World," is one of the longest chapters in the book. It treats what clearly is of special interest to the writer, what she calls "the religious dimension of Polanyi's thought,"<sup>105</sup> about which she acknowledges there has been much wrangling in Polanyi scholarship. Early in this chapter Scott sorts through some of Polanyi's ambiguous comments about religion and offers some conclusions. She clearly wants to claim Polanyi as, somehow, a religious thinker. She holds that "the discovery of meaning in our most vital experience of the world is a function of religion,"<sup>106</sup> and insofar as Polanyi was a thinker interested in recovery of meaning, he should

be recognized as a religious thinker. Certainly the things Polanyi said over the course of his life reflect his interest in religion, his sense that his philosophical perspective opened new ways to think about and accept religious meaning, and his great hesitancy about establishing for himself a religious affiliation. Scott suggests that Polanyi's insights about science can lead to new approaches to religion. Polanyi emphasized the priority of belief and the way in which understanding follows and relies upon beliefs in science and religion. Also, she stresses that religious understanding is a cultivated skill and that Polanyi suggested that tradition and authority are important in both science and religion. She insightfully emphasizes that Polanyi's implications for religion focus on "the breaking out and exploring aspect of religion"<sup>107</sup> and that these implications too often are underplayed by religious institutions and religious thinkers. She notes that Polanyi brought science and religion together in his writing as he re-conceived the character and destiny of human persons situated in nature and history and seeking meaning. Scott introduces the continuing scholarly discussion about *Meaning*, Polanyi's final book, written with Harry Prosch (treated below). What sort of account of religion is here? Although it is clear which side of the debate Scott favors, she unfortunately, does not do a good enough job of laying out the issues so that one not already familiar with them could follow. But she does a nice job of discussing what she calls Polanyi's "supra natural" (rather than supernatural) orientation, which focuses upon "the natural world revealing a meaning."<sup>108</sup>

In sum, *Everyman Revived* is a competent and readable introduction to Polanyi which sometimes digresses. On the whole, Drusilla Scott interprets Polanyi's thought sensitively as a literary intellectual particularly interested in the bearing of his ideas on culture, the arts, religion, and theology. Perhaps it is also true, as one reviewer of another introduction to Polanyi says of Scott's book, that it "goes too far in the direction of popular presentation."<sup>109</sup> If so, it nevertheless, is a popular presentation that fulfills the promise of her subtitle: Scott succeeds in showing the common sense of Michael Polanyi.

### Polanyi and Discovery:

#### Richard Gelwick's *The Way of Discovery*

The oldest and still one of the best introductions to Polanyi's thought is Richard Gelwick's *The Way of Discovery*, a book, originally published by Oxford University Press in 1977, which fortunately was re-published by Wipf & Stock in 2004.<sup>110</sup> Gelwick first met Polanyi in 1962 when he was in the United States at Stanford; then he worked directly with Polanyi at Stanford, and subsequently off and on, until Polanyi's death in 1976. He wrote the first doctoral dissertation focusing on the implications of Polanyi philosophy and put together the first bibliography of Polanyi's non-scientific writing.<sup>111</sup> As the book's title suggests, Gelwick uses discovery as the Rosetta stone with which to open up Polanyi's perspective, for Polanyi sees in discovery "the organizing point for a whole view of the world."<sup>112</sup> Polanyi presents discovery as the paradigm case of human knowing and finds in it "a calling to a new way of thinking for our whole society," a calling that articulates "a new image of humanity, of an avant-garde that calls its company to see themselves as part of a grand and daring exploration in the cosmos."<sup>113</sup> Gelwick suggests that Polanyi recognized that Western culture was in crisis and particularly that there was in the twentieth century "a crisis of belief about belief"<sup>114</sup> that required recovery of our capacity to hold on to transcendent ideals. What Polanyi does is examine discovery and show its fiduciary character; in so doing, he provides "grounds for hope that are consonant with a scientific and rational understanding of the world,"<sup>115</sup> and according to Gelwick this hopeful movement is gaining momentum. To describe Polanyi's philosophy with a single term, Gelwick suggests Polanyi's own term "heuristic."<sup>116</sup> This is a term that points to the importance of discovery and the breadth and interdisciplinarity of Polanyi's perspective. Polanyi's heuristic philosophy attacked the false ideal of objectivity revered in philosophy, science, and culture in the mid-twentieth century, but it also articulated a new vision of objectivity that emphasizes how knowers "personally participate in that reality that beckons

and guides us to ever broadening and surprising horizons of understanding.”<sup>117</sup>

Somewhat like the Scott and Mitchell books, Gelwick begins the detailed introduction of Polanyi’s thought by treating his understanding of the problems and disasters of the twentieth century which, he argued, call for a fresh examination of the grounds of knowledge. The late modern cultural situation was one of crisis: “Beset by this collapse of ultimate and unifying beliefs and foundations, thought is adrift in a vast cosmos without distinct origins or directions.”<sup>118</sup> Polanyi ultimately came to believe that the clue to the way out of the crisis was to better understand the nature of scientific discovery, but it was his insight into the brutality of twentieth-century experiences that led him to this clue. Polanyi came to believe modern ideas about science “generate destruction” and have, as well, “falsified the foundations of knowledge itself.”<sup>119</sup>

Modernity is marked by the creative development of natural science and the drive for social and moral progress. But Polanyi became convinced that the violence of modernity evolved from the way in which the twin ideals of “humanitarianism and scientific objectivism”<sup>120</sup> became intertwined. What happened was that “the fusion of scientific objectivism with intense moral passions” produced “a relentless drive for social amelioration that brooks no dissent or opposition.”<sup>121</sup> In the name of objectivism, political ideologies have arisen in modernity “that invite the individual to surrender his or her self to an interpretation of all life while telling the individual that this interpretation is objectively true and the individual bears no responsibility for it.”<sup>122</sup> Polanyi pointed out that modern people need to recognize that modern nihilism satisfies moral drives. Polanyi recognized that “to cling to our humanitarian visions, we have to believe in the value and power of ideas that are traditional and transcendent.”<sup>123</sup> Such values cannot be objectified, but the reductionistic ideal of scientific detachment simply dismisses such values. Polanyi saw that we have a cultural crisis because we have corrupted such values with corrosive doubt and narrow-minded



obsession with the explicit. His work as a scientist led Polanyi to recognize that a richer account of scientific discovery, better grounded in scientific practice and the history of science, could provide the key to reforming and recovering our ideals.

This narrative comes through more or less in the Scott, Mitchell, and Prosch books, but it is lucidly articulated in Gelwick's book. Another element of Gelwick's discussion is what he calls an "outline" of Polanyi's analysis of how "the objective ideal of knowledge" came to be "a central dogma"<sup>124</sup> of modern science and science-influenced culture. Gelwick gathers together in a twelve-page, coherent discussion the several elements of Polanyi's reading of the history of Western ideas, which Polanyi sketchily presents in several different texts. But Gelwick emphasizes that, although Polanyi took an interest in and had a sophisticated reading of the development of Western ideas, his objective was to show that the contemporary cultural crisis is rooted in our ideas and can be corrected by reforming our ideas. Polanyi wanted his contemporaries to understand that "the attractiveness of the objective ideal will turn out to be its pseudo-substitution of fact for responsible commitment, the appearance of holding knowledge without risk or values."<sup>125</sup>

Gelwick argues that Polanyi always respected the methods of science but, based on his experience as a scientist, increasingly came to disagree with the common views projected by objectivism about the methods of science. Polanyi turned toward discovery as the key to science and he realized that not much work had been done on discovery. In Gelwick's words, "The nature of discovery was perceived to be the Achilles heel of the objective ideal of knowledge. Once this issue is seen, the paradigm begins to fall and an alternative view begins to arise."<sup>126</sup> Polanyi's analysis of discovery focused attention on the skilled researcher equipped with proper tools who is attuned to the prevailing views of science. Polanyi thought that the selection of a problem to investigate was a key factor in discovery. Often the importance of a problem was not recognizable until after a discovery. Polanyi's experience taught him that strictness and rigor of procedure were secondary

to creative imagination in scientific work and that this meant that matters of personal judgment were deeply a part of scientific discovery. Polanyi collected cases of significant scientific work in which traditional scientific rules were ignored; his writing about science weaves into the discussion such cases. Gelwick also shows that Polanyi found in Gestalt psychology some clues to the way creative imagination plays into the problem of scientific discovery. Gestalt thinkers recognized that seeing a pattern involves the creation of a coherent whole (itself more than the sum of its parts, or pieces), but “Gestalt psychology had stopped at a more mechanistic point and had regarded perception to be an internal equilibration of external stimuli.”<sup>127</sup> What Polanyi added was the conclusion that seeing a pattern “is the outcome of an intentional effort of the person to find order in reality.”<sup>128</sup> Polanyi recognized the implications of this view, i.e., that the act of discovery was “dependent upon our personal powers of thought,” and that his view “overthrew three centuries of epistemology that had built upon a structure of knowledge in which there was no person.”<sup>129</sup> Thus by “following through the nature of discovery, we are led to a total rethinking of the general ideal of knowledge in our culture. Discovery is the point within science itself that leads to a truer understanding of knowledge and of ourselves as persons.”<sup>130</sup> Ultimately Polanyi worked out a view which holds that “knowing is an integration of bodily clues that we indwell in order to understand”—a view he described as challenging culture’s “most basic assumptions of our idea of knowledge.”<sup>131</sup>

In his second chapter, titled “From Scientist to Philosopher,” Gelwick charts Polanyi’s developing philosophy as a sequence of career changes from medicine to physical chemistry to social science to philosophy. He emphasizes that Polanyi’s moves reveal that he always had very broad interests in the whole world. As I have noted above, Polanyi’s writing reflects his broad interests in its strikingly interdisciplinary, so much so that reading a book like *Personal Knowledge* is difficult. Gelwick notes that “Polanyi seems to be a man perpetually fascinated by the ranges of reality that come to us through our experience. . . . The whole world is his

only genuine interest.”<sup>132</sup> Although Polanyi is sometimes tagged a philosopher of science and an epistemologist, Gelwick rightly insists that Polanyi “never saw the problem of knowledge as an academic problem alone. It was always the question of the nature of our knowing and of its bearing upon the major issues of our life and destiny.”<sup>133</sup> Gelwick discusses how Polanyi’s own early experience as a scientist taught him important things about the nature of scientific work. The fate in the scientific community of his own thesis on the potential theory of adsorption as well as his work at the Institute of Fiber Chemistry taught him about the nature of authority and orthodoxy in science and how discoveries work within the framework of authority and orthodoxy. The last two sections of the second chapter provide a brief overview of Polanyi’s major works, focusing on (1) *Science, Faith, and Society*, Polanyi’s first systematic effort in the mid-forties to produce a philosophical statement, and (2) *Personal Knowledge*, Polanyi’s *magnum opus* based on Polanyi’s 1951–52 Gifford Lectures. But there are here also summary comments on Polanyi’s later writing. Gelwick nicely lays out, piece by piece, the major elements of *Science, Faith, and Society* and *Personal Knowledge*, making a case that Polanyi’s reconceptualization of human knowing is no less than a Copernican revolution.

“A New Paradigm,” Gelwick’s third chapter, moves from the overview of Polanyi’s ideas to an expanded discussion of Polanyi’s basic epistemological model. By telling a story that is in fact a composite of examples Polanyi himself uses, Gelwick rather cleverly gets at Polanyi’s fundamental ideas about how a person integrates into a meaningful whole the tacit particulars in which he or she dwells. Later Gelwick discusses the designs (printed in his book) that are made by a series of woodblock prints, which he links to basic claims made by Polanyi’s epistemological model. Here he goes over much of the special vocabulary (“proximal,” “distal,” “tacit explicit,” “subsidiary and focal awareness”) and summary phrases (e.g., “we know more than we can tell”) that Polanyi often used to discuss tacit integration. At the end of his chapter, Gelwick briefly reviews some of the ideas found in other

thinkers in the Western philosophical tradition who seem sometimes on the edge of insights about knowing that resemble Polanyi's theory of tacit knowing. He also comments on what seemed to him, in the mid-seventies, to be signs in philosophy of science as well in the broader culture that the objectivist paradigm was yielding to views more like those articulated by Polanyi. This remains an interesting section of the book because of the emergence in the last thirty years of the literature and culture that we now usually term post-modern. Gelwick concludes his discussion of Polanyi's work as a new paradigm by saying, "[T]he separation of the knower and the known is no longer convincing even though that separation is institutionalized in our habits of thought, our ideals, and our organization of life."<sup>134</sup> He suggests Polanyi is important not as the first to criticize scientific objectivism but as the first to provide a comprehensive philosophical vision that is an "alternative commensurate with the problems that we face."<sup>135</sup>

After his discussion of Polanyi's basic epistemological themes, Gelwick turns in his fourth chapter, "A Heuristic Philosophy," to broader implications of Polanyi's perspective, what Gelwick calls Polanyi's "new vision that beckons us toward a responsible society of explorers."<sup>136</sup> This chapter is concerned with Polanyi's "comprehensive and alternative ideal,"<sup>137</sup> with what I termed, above, Polanyi's constructive philosophizing and *Lebensphilosophie*. In this chapter, Gelwick pulls many elements together. He does a good job of showing how Polanyi's philosophy has "heuristic threads" running throughout that touch "the theme of finding, discovering, growing, expanding, [and] enriching."<sup>138</sup> He nicely captures Polanyi's optimism and realism about human beings: Polanyi is a thinker "who sets before us the opportunity for unlimited exploration if we can learn to live with the infinite under the conditions of finite existence."<sup>139</sup> Gelwick's discussions outline the finer details of Polanyi's ideas but he also always is keenly attuned to the broadest parameters of Polanyi's philosophy: "Viewed in its totality, Polanyi's philosophy is one that is aimed primarily at the equipping and encouraging of humans in the unending task of pursuing meaning and truth."<sup>140</sup>

What are the several more complicated elements in Polanyi's perspective that Gelwick at least touches on and weaves together in this chapter? He discusses Polanyi's claim that science bears on reality although reality itself is always emerging. He treats Polanyi's ideas about how imagination and intuition work together in scientific discovery. He outlines Polanyi's views about the tacit powers and kinship of all animals. He sketches Polanyi's account of how tacit powers evolve in human beings into the operation of self-set standards and of universal intent in articulate human inquiry. Gelwick shows how Polanyi, expanding his theory of tacit knowing, eventually came to describe the order of the universe as hierarchical: "The universe, from inanimate matter up to human life, presents a highly complex and varied picture, yet it is one of ascending levels of order in which new operational principles come into play as the lower conditions are presented that make them possible."<sup>141</sup> This chapter also tries to make clear how Polanyi used his account of the hierarchical structure of the universe to recast ideas about evolution. Polanyi argues, "[H]uman life stands at the top of a long story of achievements, of biotic changes that involved increasing subordination of lower levels to the service of higher ones."<sup>142</sup> Gelwick writes that Polanyi "traces a new theme in the theory of evolution," one which

focuses upon centers of individuality in contrast with the usual concern of natural selection with populations. . . . What is novel here is that Polanyi has aligned his theory of knowing with the emergence of human life so that it gives an account of the rise of intelligent human life.<sup>143</sup>

In the last section of this chapter, Gelwick lays out the way in which Polanyi tried to expand the use of the theory of tacit knowing to describe the discovery of meaning in art and religion, showing how this differs from discoveries of science. These late Polanyi discussions were condensed and complex and Polanyi invented many diagrams to set forth his views. Gelwick does a reasonably good job of trying to explain all of this briefly.

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Gelwick's final two chapters round out the discussion by reviewing Polanyi's main themes and commenting on his influence. "Invitation to Explorers" surveys the ways in the mid-seventies that Polanyi's heuristic philosophy was reforming outlooks in different areas. Gelwick briefly comments on how those using Polanyi's ideas were recasting issues in different areas of philosophy and in discussions in religion and art. Of particular value is Gelwick's discussion of the several essays in *Intellect and Hope*, an important Polanyi *festschrift* from the late sixties that included reflections by several prominent thinkers. The last chapter in *The Way of Discovery* pulls together the themes developed in earlier chapters. Although the discussion here would lose some of its resonance, this chapter could be read independently as a very quick introduction providing an account of the shape and significance of Polanyi's heuristic philosophy. Gelwick reviews Polanyi's analysis of the crisis of modern culture and Polanyi's constructive philosophical effort to heal the split between the knower and the known; Polanyi aimed to recover a rich account of the person as engaged in the world. Polanyi confronts materialist reductionism and modes of thought that bifurcate matters into fact and value. Polanyi made clear, Gelwick says in conclusion, that "scientific discovery, instead of expunging our personal beliefs and our participation in the major tasks of knowing and shaping our planetary destiny, calls us to resume the pursuit of truth inexhaustibly."<sup>144</sup> As I noted at the beginning of the discussion of *The Way of Discovery*, this is the oldest of the Polanyi introductions, but it remains, still today, a particularly well-rounded and articulate presentation of Polanyi's main ideas.

**Polanyi and Post-Modernism; Jerry Gill's *The Tacit Mode***  
Jerry Gill's *The Tacit Mode*,<sup>145</sup> published in 2000, provides a discussion of Polanyi, as its subtitle—*Michael Polanyi's Postmodern Philosophy*—implies, that is pitched at a somewhat different audience than the introductions treated above. *The Tacit Mode* is not, strictly speaking, a basic introduction to Polanyi's thought, like the Mitchell, Allen, Scott, and Gelwick books. Nevertheless,

at least the first section (i.e., part 1, which is four chapters, 88 of the 183-page, eight-chapter book) may be a helpful for readers with certain contemporary interests and background who seek an orientation to Polanyi's perspective. Although Mitchell's introduction does touch upon post-modernism, Gill's book much more directly situates his discussion of Polanyi's thought in the context of the history of philosophy as that is understood at the end of the twentieth century and the beginning of the twenty-first.<sup>146</sup>

This book is part of a SUNY series, edited by process theologian David Griffin, that focuses on "revisionary, constructive or—perhaps best—reconstructive"<sup>147</sup> post-modern thought. Griffin's short essay introducing the series discusses the appropriateness of dividing post-modern thought into "deconstructive" and "reconstructive" camps and the importance of taking seriously "reconstructive" thinkers. Gill's introduction takes up where Griffin leaves off by proposing that Polanyi's thought was clearly an effort to reconstitute modern philosophy, reorienting it from the course along which it has proceeded since Descartes. Polanyi used the term "post-critical" in *Personal Knowledge* to signal his reconstructive intent and what Gill wants to do is to contextualize Polanyi's thought within the broader perspective of the history of modern philosophy. Gill aims to identify where Polanyi's "post-critical" thought fits into the landscape of the modernism–post-modernism discussion. All of the introductory works discussed here, at least indirectly, do treat Polanyi's criticisms of modernism and his constructive alternative vision, but—with the exception of Mitchell's brief discussion—none of these books so directly treat post-modernism and the very recent history of Western philosophy.

One might describe the perspective of Gill's book in another way, so as to reveal its limitations. The other reviewed books show how Polanyi's ideas emerged in the context of his life as an émigré scientist engaged with the issues of his day. Early on, Polanyi struggled to articulate a vision of science that is not centrally controlled, and this broadened into a philosophical vision of liberal society. Polanyi eventually turned to epistemology. Al-

though his epistemological model is always bound up with his interest in scientific discovery, it is also concerned with the larger project of human inquiry. Gill's discussion does not focus directly on this personal, historical, developmental account of Polanyi's thought. What he does, instead, is fit Polanyi more narrowly into the context of the modern history of philosophical ideas. This is an important contribution, but it makes his book on Polanyi one that is better suited for readers steeped in recent philosophy.

How is this book organized? It is broken into two major sections with four chapters in the first division and four in the second. Gill suggests that he does not intend to treat "Polanyi's reconstructive approach to postmodern philosophy" in a "step-by-step, chapter-by-chapter format,"<sup>148</sup> but that his purpose is to "treat the main emphases of Polanyi's thought around two major foci: locating a fresh axis (part 1) and tracing the patterns thereof (part 2)."<sup>149</sup> Since the first part of his discussion could serve as an introduction to Polanyi for those concerned with the history of philosophy and conversant with themes in the literature of postmodernism, I will focus on part 1 with only a brief overview paragraph on part 2.

Taking up the "fresh axis" discussion, chapter 1 provides a quick summary of the history of modern philosophy that outlines the approaches and problems of Descartes, Hume, and Kant. This opens up Gill's following chapter 2 discussion of "Polanyi's treatment of the structure of human experience with an eye to overcoming the errors of modernist philosophy."<sup>150</sup> Gill's discussion focuses on what he terms the "awareness dimension" and the "activity dimension,"<sup>151</sup> and this leads to an exploration of Polanyi's understanding of, and emphasis upon, the body as central to all human experience, especially to that domain of experience called cognition. Gill aims, in his dimensional analysis of Polanyi's philosophical approach, to show how Polanyi avoids the more typical modernist approach to experience in terms of realms or levels. His dimensional analysis focuses on matters of integration and interaction among the various aspects of human experience. As he notes, Polanyi is interested in the nature of meaning, and



complex meaning is “best understood as a function of the interaction among simultaneous and interpenetrating *dimensions* of reality.”<sup>152</sup> Gill contrasts Polanyi’s own philosophy with modern critical philosophy—which is “reductionistic or dualistic” while “a dimensional model allows for a greater richness, on the one hand, and the essential wholeness of human experience on the other hand.”<sup>153</sup> The “activity dimension” of experience in Gill’s account falls somewhere along “a continuum between the bodily and conceptual poles.”<sup>154</sup> Thus, “in Polanyi’s scheme of things, the intersection between the awareness and activity dimensions, with their respective poles, gives rise to yet a third dimension or continuum, namely that of cognition,”<sup>155</sup> which Gill explores in a subsequent chapter. At the end of his second chapter, however, what Gill also underscores is “the crucial role of the body in the shaping of our interaction with the world.”<sup>156</sup> Every reader of Polanyi must appreciate the way in which Polanyi conceives of embodiment and the integrative activities of persons. Gill does a solid job here of describing Polanyi’s ideas about indwelling and integration, although in my judgment he overestimates the influence of Merleau-Ponty upon Polanyi. What, then, in the final analysis are the virtues and limitations of Gill’s “fresh axis” discussion as an approach to Polanyi’s thought? It is a creative overview of Polanyi’s perspective that serves reasonably well to show how Polanyi’s views differ from much of modern philosophy. Nevertheless, despite the fact that Gill quotes generously from Polanyi texts, this is a rather abstract account. Gill provides an architectonic approach to Polanyi, which he lays out in a diagram; this may be helpful for some Polanyi readers, although it will likely confuse others.

The third chapter in *The Tacit Mode* shifts to a discussion of Polanyi’s analysis of the structure of knowledge. Here Gill examines the “interplay between the explicit and tacit components of human experience.”<sup>157</sup> He provides a solid discussion of how Polanyi challenges the traditional modernist account of knowledge as limited to what Polanyi terms explicit knowledge. Gill explains Polanyi’s attack upon the philosophical ideal of objectiv-

ity and his effort to make clear the pervasiveness of personal coefficients in all knowing. Tacit knowledge is the “anchor or tether for explicit knowing” and therefore “we always know more than we can tell.”<sup>158</sup> Gill clearly elucidates Polanyi’s case for the logical priority of tacit knowing. But he emphasizes that “Polanyi is not saying that every claim to tacit knowledge is to be accepted as veridical, any more than every claim to explicit knowledge is to be accepted as true.”<sup>159</sup> Testing tacit knowledge is, however, different than testing explicit knowledge. The case that Gill makes for Polanyi’s approach to knowing is one that emphasizes that “knowing can and must have a place to begin that neither guarantees certainty nor leads to subjectivism.”<sup>160</sup> Gill calls this place where Polanyi anchors knowledge (i.e., tacit knowing) “its ‘axis’ rather than its foundation because the latter term conjures up an image that inherently requires us to ask what it is that the foundation itself rests upon.”<sup>161</sup> Polanyi, in Gill’s view, thereby avoids the problems of both foundationalism and relativism.

In the last section of this third chapter, Gill shows that Polanyi’s model of cognitivity is a model that overcomes the challenge of skepticism: “Polanyi has placed the body, together with its inherent cognitive capacities, at the center of human existence and has, thereby, eliminated the need for a bridge between the knowing agent and the world.”<sup>162</sup> Gill argues that skepticism in the form of cultural and epistemological relativism is contradicted by the very act of assertion by its proponents. The doubt of skepticism is a parasitic activity that “presupposes that which it claims to undermine.”<sup>163</sup> Polanyi has sharpened this perspective to show that at the heart of meaningful cognitive activity lies universal intent. He accepts that there is a world to be known and that human beings can trust their powers of perceptual and logical discernment. This is what it means to root cognitive activity in “acts of tacit embodiment in which we necessarily know more than we can tell.”<sup>164</sup> But cognitive activity also has a social dimension. Thus Polanyi emphasizes that human individuals explore the cosmos as members of particular cognitive communities. Communities of interpretation like those found in science

are necessarily conservative. In the case of science, Polanyi describes that conservatism in terms of the objectification of certain values (scientific plausibility, scientific value, and originality) that in fact are uneasy bedfellows. Gill argues that Polanyi carefully threads his way between the challenging poles of late modernism and post-modernism found in relativistic deconstruction, on one hand, and forms of authoritarianism, on the other. Polanyi is both a fallibilist and a thinker committed to the claims that human beings can know the truth and that the pursuit of the truth is an important communal endeavor.

Gill's fourth and last chapter in the opening section of his book is an effort to look at Polanyi's "reconstructive approach to postmodernism philosophy"<sup>165</sup> in connection with deconstructive post-modernism, represented by Derrida, Lyotard, and Foucault. While it seems likely that some Polanyi scholars would be very uncomfortable with some of the affinities Gill finds between these three and Polanyi, I find Gill's treatment to be reasonably balanced. This chapter may be of particular interest for the beginning Polanyi reader who happens to be well acquainted with Derrida, Lyotard, and Foucault. Gill argues that "[b]oth Polanyi and the deconstructivists are concerned to identify and overcome the cognitive limitations inherent within the modern way of thinking, limitations that result from the presuppositions inherited from the overall philosophical posture taken by early Western thinkers. . . ."<sup>166</sup> Gill spends about twelve pages setting forth what he regards as the basic elements of the post-modern critique put forth by his three representative deconstructionist thinkers. All, in one way or another, offer what Gill calls a "critique of fixed meaning."<sup>167</sup> All three take an approach to "truth" and "knowledge" that insists upon "the 'situated' nature of all human cognitive activity."<sup>168</sup> These figures all offer a "critique of monolithic systems,"<sup>169</sup> whether these are philosophical, economic, or other grand schemes. Gill's discussion makes good use of carefully chosen quotations to make his case. Nevertheless, it seems to this writer that he sometimes stretches too far to defend the sweeping nature of some deconstructive claims. In Gill's view,

“deconstructive thinkers conceive of their project as positive. Deconstruction is not equivalent to nihilism.”<sup>170</sup> Here again, especially with Foucault, Gill seems to have to reach to make his case. Following his effort to lay out basic parameters of deconstructive modernism, Gill turns to what he calls “a Polanyian critique”<sup>171</sup> that shows ways in which Polanyi’s criticism of modernism is complemented by constructive philosophizing that recovers some of the values of the Enlightenment and tempers some of the views of deconstructive postmodernists. Gill argues, for example, that Polanyi’s discussions of language, tacit knowing, and meaning do not, like the deconstructivists, “overshoot the mark.”<sup>172</sup> “The dynamics of tacit knowing preclude the possibility that any symbol can be thought of as attached to any referent in a permanent manner. Just as reality continuously reveals itself, so do linguistic meanings.”<sup>173</sup> However “the same tacit dynamic makes it clear that meanings cannot be open-ended in the absolute sense that seems to be implied by deconstructive analysis.”<sup>174</sup> With the deconstructionists, “Polanyi would agree that social and political considerations factor into the discovery and formulation of knowledge,” but Polanyi takes a quite different stand regarding the “proper interpretation of the significance of such factors.”<sup>175</sup> Polanyi holds that “the simple fact that cognitive activity is a social phenomenon does not entail that it is bogus or that its results are unreliable.”<sup>176</sup> Gill stresses that Polanyi’s emphasis upon “universal intent” ultimately allows him to speak about “truth” and “knowledge” in a way that simply is not possible within the deconstructive framework.

In summation, the opening four chapters of Gill’s book provide an overview of Polanyi’s basic ideas about tacit knowing; this overview is packaged in Gill’s own framework constructed upon Polanyi’s “axis” for approaching cognitvity, and this framework is helpfully cast against the background of modern and post-modern philosophy.

I don’t find the second part of Gill’s book (the last four chapters and the conclusion) particularly useful as an introduction to Polanyi, but it does follow out elements of the opening

section. The last section is cast as “tracing the patterns of various aspects of our common search for knowledge”<sup>177</sup> in science and political theory, in understanding language and promoting education, and in art and religion. What Gill wants to do in these chapters is comment on directions Polanyi’s ideas, and particularly his theory of tacit knowing, have led or seem to point. He discusses Polanyi’s account of science but notes that Polanyi’s views are rather individualistic and were formulated before the era of “big science.” He discusses Polanyi’s political philosophy and finds Polanyi too conservative; the post-modernist critique, by way of contrast, is more keenly attuned to “the sociopolitico-economic dimensions of human cognitive activity.”<sup>178</sup> Gill thoughtfully raises questions about Polanyi’s ideas, but he sometimes also shows, in my view, that he has not fully digested all of Polanyi’s early ideas about important matters such as public liberty, the structure of liberal society, and the importance of transcendent ideals in the face of materialism. His chapter on language and education is interesting, especially his discussion of Polanyi, Merleau-Ponty, and Wittgenstein, but the discussion is, by Gill’s own admission, primarily about his own philosophy of education that grows out of Polanyi’s basic insights. Likewise the chapter on art and religion is what he calls an “interpretative effort”<sup>179</sup> to trace the implications of Polanyi’s theory of tacit knowing for aesthetics and religion. Much of the discussion here is an abstract version of some of Polanyi’s late ideas; clearly, these are matters that interest Jerry Gill as a philosopher. The last substantive chapter in Gill’s book is a quick romp through some of the literature on Polanyi, with comments about ways Gill’s own account complements or differs from what others have said about Polanyi’s thought. Compared to the opening section of the book, part 2 is a much more eclectic discussion in which Gill uses Polanyi to launch his own treatment of issues. But the opening section of *The Tacit Mode* could, for the reader with the right background and interests, provide an interesting orientation to Polanyi as a figure to be seen within the horizon of recent discussions of post-modernism.

**The *Meaning* Controversy: Harry Prosch's *Michael Polanyi: A Critical Exposition***

The late Harry Prosch's *Michael Polanyi: A Critical Exposition* was published in 1986.<sup>180</sup> The first three of the four sections of Prosch's book could certainly serve as an introduction to Polanyi's thought. Prosch spends about 200 pages on what he describes as "the task of showing simply from Polanyi's own texts, how, in his own intentions, the several facets of his varied work held together."<sup>181</sup> Nevertheless, this representation of Polanyi, as I shall argue below, does have some objectives other than those of a simple introduction to Polanyi. Clearly, the intended audience for Prosch's book, like the Gill book, is philosophers. Prosch is attuned to the philosophical tradition and he straightforwardly says he intends to "help philosophers understand the meaning and strength of Polanyi's basic contentions."<sup>182</sup> The reader choosing Prosch's book as an introduction should therefore expect that Prosch approaches much of the exposition in terms of what contemporary philosophers regard as problems. *Michael Polanyi: A Critical Exposition* is, however, a carefully organized and, for the most part, lucidly written book, although some sections are as dense as the Polanyi texts they explain.

Prospective readers should know something about the history of *Michael Polanyi, A Critical Exposition*. Prosch's book was published a year after Drusilla Scott's book was published in the United Kingdom. The Scott and Prosch books thus became available about the same time and not quite a decade after the Gelwick introduction, and there were interesting interactions among the three authors beginning after the publication of the earlier two introductions. Anyone looking at all three volumes (or choosing among them) should know at least the outline of this little fragment of the history of Polanyi scholarship as well as something of the history of Prosch's own work with Polanyi.

Harry Prosch co-authored Polanyi's last book *Meaning*,<sup>183</sup> published in 1975, just a few months before Polanyi's death in 1976. The book is based on lectures Polanyi gave in the United

States from 1969 to 1971; it “enlarged the scope”<sup>184</sup> of previous Polanyi publications by analyzing meaning in art, ritual, and religion. Polanyi became, in the early seventies, increasingly fragile and too weak mentally to pull together the ideas in his lectures as a last great book. Prosch was invited by Polanyi in 1972 to help him prepare this lecture material for publication. With Polanyi’s progressive decline, Prosch became “more . . . a collaborator than . . . an editor or an assistant.”<sup>185</sup> Certainly, the correspondence between Prosch and Polanyi that is in the Polanyi archives at the University of Chicago makes very clear that *Meaning* would never have been published without Prosch’s diligent work and compassionate regard for the failing Polanyi.<sup>186</sup> Ultimately, Prosch and Polanyi signed the contract acquired by Prosch from the University of Chicago that led to the publication of *Meaning* as a co-authored book. Prosch is quite clear, however, that he “made every effort to stick as closely to the very words of his [Polanyi’s] unpublished lectures and of his other published works as continuity, coherence, and the development of a book with its own internal integrity permitted.” Prosch emphasized that, while the book’s “final written form was my work,” certainly “the ultimate origin of everything was Michael Polanyi.”<sup>187</sup>

Despite Prosch’s comments about *Meaning*, after its publication, this book was received with a certain amount of puzzlement by Polanyi scholars. It was generally unclear how this new book fit with the perspective so carefully elaborated in *Personal Knowledge* and in the short books and articles published in the decade after publication of his *magnum opus*. Polanyi’s ideas, like those of any working philosopher, developed over the course of his life and some particularly important developments (often alluded to by Polanyi himself) occur in the publications that ensued in the ten years after *Personal Knowledge*. In some ways the connection between *Personal Knowledge*, the succeeding publications, and *Meaning* was clear, but in other ways there seemed to be a disjunction. The apparent disjunction was perhaps complemented by several historical factors. At least some scholars interested in Polanyi’s philosophy knew that Polanyi’s mental capacities were

declining by the early seventies. Also draft copies of some of Polanyi's U.S. lectures at universities from 1969 to 1971 were circulating among scholars. In a word, not long after its publication there were questions about how much *Meaning* reflected the hand of Harry Prosch.

Prosch himself contributed to some of the emerging discussion about *Meaning* by writing in 1979 a lengthy critical review of Gelwick's *The Way of Discovery* for the journal *Ethics*.<sup>188</sup> This review was the beginning of a discussion between Gelwick and Prosch about how to interpret certain elements of Polanyi's philosophy and particularly how to interpret *Meaning*. In the following years, a number of scholars interested in Polanyi were drawn into this discussion. There were two academic meetings in the early eighties in which Polanyi scholars discussed the content and status of *Meaning*, and this spilled over into subsequent reviews, articles, and rejoinders published over several years in journals sponsored by scholarly groups interested in Polanyi in the United Kingdom and in the United States.<sup>189</sup> A set of articles was published in *Zygon* in 1982, treating Polanyi's account of science and religion.<sup>190</sup> Gelwick and Prosch sharpened the issue of interpretation with their diametrically opposed articles in this volume.<sup>191</sup> Subsequently, when Drusilla Scott's *Everyman Revisited* was published in 1985, Prosch wrote a generally very positive review which nevertheless raised the same questions about Scott's account of Polanyi's views of art and religion that he had raised in his review of Gelwick's book.<sup>192</sup>

In a nutshell, Prosch argued that Gelwick, Scott, and several others scholars interested in Polanyi's thought misrepresent (in their writings) Polanyi's claims about the metaphysical status of the real entities known in art and religion (e.g., God). Prosch insisted that Polanyi intended to emphasize the ontological discontinuity between the natural and what are called in *Meaning* "transnatural" entities. Such real transnatural comprehensive entities do not exist independent of the articulate system of a particular cultural community of inquiry as do the natural objects known in science. That is, science bears on independently exist-



ing, empirically confirmable realities while religious meaning, like artistic and mathematical meaning, bears on realities that do not exist independently of the articulate system which imaginatively projects them. Gelwick, Scott and several other scholars have argued (especially based upon texts published before *Meaning*) that Polanyi affirmed there was no fundamental ontological difference in kind between the realities known in science, art, and religion. Polanyi's philosophy is a heuristic perspective with a stratified conception of reality that calls knowers in every field of inquiry to accept the responsibility to seek the truth. Polanyi emphasized differences in levels or kinds of participation involved in different areas of inquiry, but he intended to make clear the continuity and value of the types of inquiry crossing a spectrum from physics to religion. Polanyi appreciated the reality of comprehensive entities of all types, those known in science and those known in theology, although he described the engagement of the knowing subject in different areas of inquiry (attending to different kinds of reality) in somewhat different ways.<sup>193</sup> In sum, although Prosch highly regarded the earlier Gelwick and Scott introductions to Polanyi's philosophy, his own book represented to him an account of Polanyi that provided a corrective about how to interpret certain parts of Polanyi's thought. Particularly Polanyi's views about art, ritual, and religion, topics that are central to *Meaning*, Prosch believed were being misrepresented in earlier introductions.

*Michael Polanyi: A Critical Exposition* is a book that Prosch started in the late sixties and early seventies when he first began to take a serious interest in Polanyi's thought. Prosch came to Oxford to work with Polanyi during a sabbatical in 1968–69. He was curious about Polanyi's odd philosophy and came to sort through it more carefully, but he left his sabbatical as something of a convert to Polanyi's views:

This book had its origin in a sabbatical leave I spent with Michael Polanyi in Oxford, England, during 1968–69. I had come as an interested but rather critical spectator, intending to assess coolly what this strange interloper into philosophy was doing, and to

analyze his thought into its fundamental grounds and principles. I left a fellow participant in an active effort to develop an adequate contemporary philosophy, wholly convinced that Polanyi was on to something tremendously fundamental, sound, and healthy for the modern mind, but not yet wholly convinced that he had got it all perfectly straight.<sup>194</sup>

As he became more convinced that Polanyi's ideas should be better understood by contemporary philosophers, Prosch initiated his scholarly project of doing a book laying out the coherence of Polanyi's thought. At least substantial parts of what are the first three sections of *Michael Polanyi: A Critical Exposition* were written before the publication of *Meaning* in 1975. Archival correspondence suggests that Polanyi read, in the early seventies, and praised what were probably draft materials structured like the first three sections of his later book. Prosch's plans to finish his book were interrupted by his collaboration with Polanyi. He worked for several years on *Meaning*, but he also took on other projects that Polanyi requested, while publishing other things on Polanyi's thought. *Michael Polanyi: A Critical Exposition* was finally published a decade after Polanyi's death and in this decade the Gelwick and Scott introductions were published. The discussions about how to interpret Polanyi and *Meaning*, outlined above, occurred,<sup>195</sup> and other philosophers also began to comment on Polanyi's thought.

Prosch's book is organized to show how Polanyi served as a "physician to the modern mind,"<sup>196</sup> and Prosch argues that Polanyi never lost sight of this larger goal. His philosophy was not calculated to win him a place in the profession, but to "restore the health of the modern mind."<sup>197</sup> There are four sections that frame this sickness-to-health metaphor: diagnosis, prescription, treatment, and evaluation. Here I will focus only on the first three since these are the ones that might be used as an introduction to Polanyi. The evaluation section provides Prosch's response to a number of sympathetic Polanyi interpreters who, nevertheless, criticized Polanyi on certain points. Prosch comments here not

only on some of the discussion about *Meaning* during the previous ten years after *Meaning's* publication, but he also outlines and responds to critical comments about Polanyi's perspective from philosophers such as Marjorie Grene and Rom Harre.<sup>198</sup>

Finally, it should be noted that Prosch seems to have thought of his book not only as a corrective interpretation of Polanyi's ideas about art, ritual, and religion and as a response to a range of different kinds of criticisms of Polanyi, but also as a book unlike any of the existing Polanyi introductions insofar as it emphasizes the overall coherence of Polanyi's thought: ". . . I wish to do for Polanyi's work something which no one has yet done, not even Polanyi himself. I want to show how the various subjects and areas he has taken up belong together in terms of his fundamental objectives."<sup>199</sup> To this reader, Prosch does effectively show the coherence of Polanyi's perspective, but I think Gelwick's and Scott's earlier introductions as well as Mitchell's new introduction also do this reasonably well. Prosch notes that he has "avoided a chronological or historical approach"<sup>200</sup> in presenting Polanyi's views in order to focus upon matters of coherence. Gelwick, Scott, and Mitchell do include more historical details, showing how Polanyi's philosophy emerged from his life experiences, hinting also at how his ideas evolved over the course of his life. Prosch does this too, but this is a matter underplayed in his book. The organization of Prosch's book sometimes leaves the reader unclear about how ideas developed in one area led Polanyi toward other areas for exploration.

Prosch's opening three chapters outline Polanyi's "diagnosis" of the plight of the modern mind. He later clearly summarizes the material here in this way:

[T]he modern mind is suffering from two diseases. These consist of two false ideals: that of detached objectivity or explicitness as the ideal of knowledge and that of perfectionism as the ideal in moral and social concerns. Together these two ideals—actually incompatible—have worked themselves into what he called "moral inversion."<sup>201</sup>

There are many very interesting and incisive elements in Prosch's discussion of modern habits of thought in these chapters. In his opening chapter, Prosch carefully outlines Polanyi's account of how modern European intellectuals helped destroy the free cultural and cosmopolitan environment they needed to thrive. He discusses Polanyi's clear vision that a utilitarian commitment to science serving the public's material interest was a betrayal of what is primary in science. Science must accept as its guide the power of thought to see the truth. Prosch very aptly describes Polanyi's sense that intellectuals and others in the twentieth century acquired an "all-pervasive moral dissatisfaction"<sup>202</sup> with everything about modern industrial civilization. They were captivated by social planning as a solution to the disorder and suffering of modernity. Polanyi saw that even neoclassical economists who argued against social planning in the name of freedom failed to see how complexity works to make impossible certain kinds of planned programs. Prosch also does a very credible job of showing how Polanyi, as a chemist in the mid-thirties, was already working on ideas that later become his theory of tacit knowing. Polanyi saw the modern obsession with exactitude and countered it by hinting at the value of the inexact in most areas of inquiry.

Prosch's second chapter lays out Polanyi's case that the modern mind is the victim of passions working at cross purposes. Polanyi claims that modern desires for a better planned society led modernity toward totalitarianism and violence. General aspirations operating vaguely and pluralistically in a free society were undercut by specific social aims in the early twentieth century. Fanaticism and widespread sympathy for fanaticism followed. Polanyi located the clues for this modern mental pathology in the combination of excessive but hidden moral passions, drawn from Christianity and the progress since the Enlightenment, and enthusiasm for an ideal of absolute objectivity, drawn from the traditions of the scientific revolution. Moral perfectionism and the notion of a complete objectivism produce what Polanyi called "modern moral inversion."<sup>203</sup> Moral inversion involves the aban-

donment of vague but transcendent ideals while surging subterranean moral passions drive toward absolute rebellion or nihilism.

Prosch's final chapter in the "diagnosis" discussion turns to the "causes" of modernity's unbalanced mental outlook which has been so prone to violence. This chapter incisively reviews the case Polanyi makes for how Enlightenment ideals were subverted in the developing history of modern ideas as romantic thought emerged and converted the affirmation of rationality and transcendent ideals into service to radical individualism, nation state, raw power, and materialism. The discussion of Polanyi's account of the evolution of the modern mind is a careful summary that picks up Polanyi's subtle nuances. Prosch makes excellent use of Polanyi material written in the late forties. Surprisingly few people interested in political philosophy, ethics, the history of ideas, or even Polanyi's epistemology and views on the history and philosophy of science are aware of the depth and coherence of Polanyi's analysis of the evolution of modern thought. Polanyi is, of course, recognized as an opponent of Marxism and "planned science," but there is much more to Polanyi's analysis than such tags connote. Although the Mitchell, Scott, and Gelwick introductions all have discussions of moral inversion and the origins of modern nihilism and totalitarianism, Prosch, an ethicist deeply interested in the history of ideas before he ever met Polanyi, offers a thorough discussion of these topics and their roots.

The second section of Prosch's book moves from a review of Polanyi's diagnosis of the sickness of the modern mind to a five-chapter discussion of his prescription to cure the sickness. The cure was, of course, to develop a new understanding of knowledge and how persons acquire knowledge. All of these chapters treat important topics as they build on each other. First Prosch sets forth Polanyi's ideas about how tacit knowing operates at a foundational level in human perception. He then moves to a broader discussion of Polanyi's account of indwelling and generalization, followed by his analysis of Polanyi's ideas about scientific discovery and the problems of verification.

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Prosch's fourth chapter outlines why Polanyi turned to epistemology and what sort of epistemology he affirmed. This is an intricate discussion that again shows how much Prosch aimed his book at a projected audience of philosophers. Polanyi came to see the ideal of detached objectivity as problematic, and his own experience as a scientist had taught him both the deeply personal nature of scientific inquiry and the value of the inexact. This turned him toward epistemology, and what he eventually did was work out a strikingly new account of knowing, one that has had few connections with the discussion of philosophical problems in the West. Prosch then works through the basic claims in Polanyi's theory of tacit knowing, which he does primarily by carefully summarizing Polanyi's account of perception as a purposeful and skillful personal act of integrating subsidiaries. Prosch labors through the many complicated discussions in Polanyi texts about experiments concerned with perception. It is often such discussions in books like *Personal Knowledge* that novice Polanyi readers find impenetrable. While Prosch does a sound job analyzing and representing this material (and this may be particularly of interest to philosophers), even in Prosch's hands, this is difficult terrain. In the final analysis, I think Prosch does do a credible job of explaining the basic elements of Polanyi's epistemological model.

In the fifth chapter titled "Indwelling," Prosch shows how Polanyi's tacit integration is bound up with a vision of the person as active and intentional. Polanyi built his conception upon ideas first developed in Gestalt psychology's partial rejection of mechanical approaches to perception, but he also rejected Gestalt notions about spontaneous equilibration. Prosch discusses how Polanyi conceived the operation of signs: they "function as clues and are known in a subsidiary way as bearing upon a meaningful integration of them forming that which is known in a focal way."<sup>204</sup> There is a discussion in this chapter of the functional, phenomenal, and semantic structure of tacit knowing as well as the ontological aspect. These are matters that Polanyi discusses in a very condensed section of *The Tacit Dimension*. Prosch's treatment is itself dense, but it does help illumine Polanyi's discussion,

especially since Prosch links his account with a broader discussion of how Polanyi thought of meaning and mind.

Prosch's sixth chapter, "Generalization," is built upon the account he has earlier given of Polanyi's understanding of perception and, more generally, tacit knowing. Here Prosch shows that Polanyi's understanding of the activities of scientists affirm that tacit knowing is foundational for inquiry and discovery. As Prosch puts it, for scientists such as biologists learning to identify species, "these operations of science thus have to be understood basically as skills . . . not fundamentally different from that of the tightwire performer, the bicycle rider, or the swimmer."<sup>205</sup> Polanyi respects the "'ineffable' processes of thought" which "are operative in science whenever a scientist structures a whole from parts."<sup>206</sup> Prosch's discussion of Polanyi's views on matters like conceptions of classes and problems of induction is particularly good since he deftly uses many of Polanyi's own insightful comments. Nevertheless, as I have noted above, Prosch's review of Polanyi's account of science does seem to be a representation mindful primarily of the issues likely to be of concern to philosophers (and perhaps especially philosophers of science). At the end of this chapter, he summarizes his review:

Thus Polanyi made a thorough examination of our most trusted mode for establishing a cognitive beachhead among the welter of our perceptions, viz., the "scientific" mode, and showed that it makes use of the same kind of integrative action that perceptions do, namely a dwelling in an unspecifiable conglomeration of subsidiary clues that we bring to bear upon the object of our focal attention.<sup>207</sup>

The final two chapters in Prosch's "prescription" section of his book focus on Polanyi's ideas about scientific discovery and verification. This is a natural next step, moving from the foregoing treatment of classes, induction, and the epistemology of tacit knowing, all of which emphasize the integration of tacitly known subsidiaries. Somewhat like the earlier discussed Polanyi intro-

ductions, Prosch suggests that for Polanyi the problem of discovery came to be the paradigm case of knowing. Understanding discovery should be recognized as central to a philosophy of science, and the key to discovery is understanding how scientists come up with good problems. Prosch lays out Polanyi's views about discerning good problems, as well as the way Polanyi emphasizes commitment and universal intent, and the passionate and deeply personal nature of the discoverer's contact with reality. He also perceptively sets forth the way Polanyi thinks imagination and intuition complement each other in the work of scientific inquiry. All in all, Prosch's treatment of Polanyi's study of discovery successfully pulls together the many threads that are integral to Polanyi's discussions, and then he turns from how discoveries are made to how they become accepted in the scientific community. The short chapter on verification in science outlines Polanyi's claim that scientific value is determined by three coefficients—accuracy, systematic importance, and intrinsic interest—which often are mixed in different proportions in different areas of scientific work. Prosch notes why Polanyi perceived plausibility and originality as important in science. He explains that what Polanyi really wanted to show was “what the *logic* of discovery really is.”<sup>208</sup> At the same time, Polanyi was attentive to the larger dynamics of scientific opinion and emphasized that the scientific community is situated within a broader naturalistically disposed fabric of belief in Western culture. Prosch ends the second section of his book by discussing what he calls the five indeterminacies that Polanyi affirmed as “necessarily part and parcel of what knowledge is” and which “necessitate that an ideal of pure objectivity not only is in full perfection unattainable . . . but that such an ideal itself, *as an ideal* is false.”<sup>209</sup>

The third division (“Treatment”) of *Michael Polanyi: A Critical Exposition* consists of five chapters that fill out the statement of Polanyi's philosophical perspective by moving from the discussion of tacit knowing (in perception and scientific discovery) to the larger implications of this new epistemology. Prosch opens this section by treating Polanyi's ontological claims. Polanyi was



steadfastly an opponent of reductionism, which he firmly believed was well entrenched in the sciences and, more broadly, in modern culture. He argued that we particularly needed to reform prevailing “notions about the nature and status of living things.”<sup>210</sup> Prosch tries succinctly to lay out in this chapter some of the antireductionist themes that Polanyi developed. He summarizes Polanyi’s ideas about the operation of principles within boundary conditions and his account of “ontological hierarchies as structuring everything.”<sup>211</sup> He outlines Polanyi’s notions about the “achievement” of living beings, which is for Polanyi an “essential concept.”<sup>212</sup> He summarizes Polanyi’s criticisms of the reductionistic accounts of evolution in his time. Although the discussion in this chapter is dense, Prosch does succeed in bringing together in eleven pages the several important ontological implications of Polanyi’s epistemology.

In his tenth chapter, “Personal Participation,” Prosch turns to a more detailed analysis of Polanyi’s discussion of the nature and kinds of meaningful integrations achieved by humanity: Polanyi intended “to show us that personal participation is involved in all knowing, which is, moreover, always a sort of doing or creating.”<sup>213</sup> Polanyi held that

the meaningful integrations achieved by man in the noösphere form a continuum with those achieved in perception and knowledge, in the sense that they are all examples of the tacit triad: (1) a mind (2) dwelling in subsidiary clues and (3) creating a meaningful integration of these clues into a focally known whole.<sup>214</sup>

But Prosch wants to make plain his view that “Polanyi, of course, never lost sight of the fact that there are differences between the integrations and realities forming the noösphere and those existing prior to the noösphere.”<sup>215</sup> In the very careful discussions in this chapter, Prosch lays the groundwork for his account in the following chapters of Polanyi’s views of art and religion. Here he sets forth the basic elements of his particular

interpretation of ontological distinctions Polanyi made between different kinds of realities, an interpretation that I have, above, pointed out is at odds with interpretations of Gelwick and Scott. Prosch is quite self-conscious about this difference and, as I have suggested, wants to set the record straight in regard to what precisely he believes Polanyi claimed about different kinds of realities. Anyone reading *Michael Polanyi: A Critical Exposition* should at least be mindful that this is a point of contention in Polanyi scholarship rather than a settled matter. Prosch's reading of Polanyi texts is, in my view, one defensible reading, but it is not the best reading. Prosch makes Polanyi into a philosopher much more conventional than he was.<sup>216</sup>

Prosch emphasizes that Polanyi understood the origins of different kinds of realities in different ways: the origins of realities of the noösphere

are different from the realities that perception and scientific knowing are concerned with. These latter are understood by us to exist, Polanyi said, independently of man's activities. Man's perception and his science thus strive to attain to an adequacy to what is already there. Polanyi held, therefore, that their truth is subject to what we must call a process of verification. The truth of what man has created, on the other hand, must he said, be subject rather to a criterion of their validity.<sup>217</sup>

Polanyi did, of course, discuss the differences between "verification" and "validation" in *Personal Knowledge*, but Prosch construes this distinction in an essentially neo-Kantian manner. For Prosch, much turns on this distinction since it sets off empirical realities that exist from those "noöspheric realities engendered by man."<sup>218</sup> But Prosch makes the case that Polanyi clearly recognized the "noöspheric realities" as most important to humanity. He argues that Polanyi emphasized the function of such realities was "to create obligations binding upon us and thus to direct our lives."<sup>219</sup> Prosch holds it was Polanyi's

hope that his new insight into epistemology, and into an ontology correlated with it, would lay the foundations for a rebirth of faith in the reality of these “spiritual entities,” as he sometimes called them, and therefore in the integrations created in science, poetry, art, religion, and morality.<sup>220</sup>

In his discussion, Prosch helpfully outlines the way in which Polanyi recast and expanded the contemporary understanding of biology. He shows how Polanyi analyzed the types of commitment involved in biological inquiry and ultimately suggested that responsible commitments of the highest order involve a kind of participation of the knower that transforms biology into what Polanyi called “ultra biology.” As in the previous chapter, Prosch explains Polanyi’s frequent attacks upon reductionism popular in biology, neurology, and behaviorist psychology, which are all “logically related to the basic assumption of a one-level universe of atoms, which alone possess true ‘reality.’”<sup>221</sup> In sum, what Prosch makes very clear in this chapter is that Polanyi’s theory of tacit knowing underscores the various degrees of personal participation in the different types of knowledge. Our tacit participation in our knowledge of physics, for example, is not like that in our knowledge of history. While Polanyi distinguished different degrees of personal participation, he respected the full range of types of human inquiry. He emphasized the need of modern culture to recover confidence in a worldview attuned to ever emerging possibilities for richer fields of meaning.

Prosch’s eleventh and twelfth chapters turn directly to the material that is the focus of the book *Meaning*. First, Prosch summarizes Polanyi’s discussion of symbol, metaphor, and art, and the following chapter then focuses on rites, myths, and religion. Polanyi late in life came to distinguish the class of tacit knowing operations involved in normal sign operations (indication) from symbolic operations, calling the integrations that recognize symbolic meaning “self-giving” as opposed to the “self-centered” integrations of indication (“self-centered” here does not suggest an egotistical focusing upon oneself but refers to the

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way the self participates in the processes of integration). The subsidiary particulars of self-giving integrations are intrinsically interesting, unlike the focal object of such integrations; such integrations produce meaning that moves us deeply because the focal object is a perceptual embodiment of diffuse memories and other inchoate but emotionally important matters. Self-giving integrations thus involve a kind of engagement or participation that is not present in self-centered integrations. Prosch lays out carefully the elaborate diagrams that Polanyi used late in life to explain the dynamics of signs and symbols; he then moves on to show how Polanyi's account of metaphor was built upon his understanding of symbol. The subsidiary tenor of a metaphor bears on the focal vehicle of the metaphor but the focal vehicle, somewhat like a symbol, enhances or embodies the tenor in an emotionally rich manner. Metaphors are meaning structures that require imaginative participation and they move us: "Metaphors, through our participation in them, literally establish meaning in our lives—a meaning that could never be established through perception or scientific knowing, and certainly never rendered explicit and 'told' in any prosaic fashion."<sup>222</sup> Prosch reviews Polanyi's discussion of the framing devices in representational art. Such devices are elements incompatible with other subsidiaries, but those who can find meaning in art are able finally to perform integrations that bring together even the most incompatible elements. What Polanyi termed "visionary" art, much more than representational art, emphasizes the element of incompatibility among subsidiaries, but modern people have learned to make the kinds of imaginative integrations necessary to appreciate the meaning of visionary artifacts. The meanings of symbols and art are thus a special class of meanings that Polanyi designated "transnatural," and the transnatural meanings of works of art are set off from the ordinary run of daily life in which the indicative integrations of perception and non-symbolic inquiry are normative. The self-giving integrations of representational arts thus always involve incompatibility and require imagination in a way that self-centered integrations which produce natural

meaning do not. Certainly, Prosch's summary of the explorations represented in Polanyi's last North American lectures, which is the material Prosch labored to make into the co-authored book *Meaning*, is a competent summary. Prosch's review is, however, one that emphasizes what he thinks is important for the task of correcting the discussions of Polanyi's views in the earlier published Gelwick and Scott introductions:

Works of the arts cannot, we can surely see by now, be verified for Polanyi. If we can consider them true and real in any sense, it is not because they truly portray anything that exists—the world, ourselves, our lives. In a very real sense they can be said rather to create a world, a self, and a life for us—or rather perhaps induce us through the work of our imagination to create these things. Their validity therefore rests for him precisely in their power to do this and to continue to do this for us.<sup>223</sup>

The twelfth chapter, "Religion" turns to Polanyi's treatment of rites, myths, and religion, three topics that are clustered together in the same way that Polanyi's treatment of symbol, metaphor, and works of art are clustered. Rites or rituals have an artificial character that sets them off from daily life. Although the modern temper disposes us against confidence about the importance of rites and ceremonies, we can learn to dwell deeply in such artificial forms and integrate their incompatible elements. What we discover is a moving and comprehensive vision of our own lives. Prosch points out that Polanyi wanted to claim that in some sense the myths that rites and ceremonies are rooted in are true. Modern scientific culture discourages any talk of truth in connection with rites, ceremonies, and myths, but Polanyi made a serious effort to address this matter. Prosch reviews some of Polanyi's discussions that relied heavily upon Eliade's notions about the sacred, summarizing his understanding of Polanyi's position thus:

So Polanyi maintained that myths also can affect us only if they can detach us from our ordinary world of experience. But this

they can do, he held, because the events described or portrayed are wholly other than actual human experience. To believe the myth and to live it though its rites is thus to carry us away to a transnatural integration, such as exists also in art and poetry, in which incompatibles (which remain incompatibles) are combined into a meaningful integration by a feat of our imagination.<sup>224</sup>

Prosch's lengthy analysis of Polanyi's discussion of myth carefully reviews Polanyi's effort to sort out differences in the archaic and modern mind. Archaic minds that were able comfortably to dwell in myth worked like modern minds integrating subsidiaries but archaic minds apparently had a different framework of plausibility: "Modern man differs from archaic man only in his judging whether certain kinds of observed spatial or temporal contiguities should be regarded as coincidental or as causal."<sup>225</sup> Archaic man, by invoking magic, worked toward the elimination of the uncertainties represented by temporal coincidence in his world. Archaic minds seem to have been more impressed by the "sensory quality of meaningful relations, and imagination greatly exaggerated (in our judgment) the interactions of subsidiaries and their focus, especially when the object is a human person."<sup>226</sup> This enabled archaic minds to view their tangible world far more holistically than is possible in the critical-analytic perspective of modernity. Polanyi thought the archaic mind tended to exaggerate coherences to the point of absurdity, but it did (unlike many reductionistic modern minds) recognize "indwelling as the proper means of understanding living things."<sup>227</sup> The myths of archaic people were meaningful forms supporting life because archaic people understood that they were "works of the imagination as are works of art. And, like works of art, their truth can consist only in their power to evoke an experience in us which we hold to be genuine."<sup>228</sup> Certainly more than any of the other books on Polanyi's thought discussed here, Prosch's analysis of the *Meaning* material, and particularly his treatment of myth, digs into the details and tries to present what Prosch takes to be the cogency of Polanyi's perspective.

Prosch summarizes Polanyi's understanding of religion as incorporating all of the elements found in myth and works of art:

Religion . . . is also a work of the imagination. It is a sprawling work, since it incorporates myths, rites, and ceremonies . . . and also doctrines and worship. As a transnatural integration, it is, for Polanyi, an integration of incompatibles. Moreover, it is detached from our ordinary life by a "frame"—as are works of art.<sup>229</sup>

Polanyi believed that the imaginative transnatural integrations producing religious meaning were extraordinarily comprehensive in scope. For those who can achieve such integrations, "it is our *total* life that becomes at last integrated in the presence of God."<sup>230</sup> Polanyi held that the key to the plausibility of religious integrations lies in whether or not human beings have a deep sense that the world is fundamentally meaningful. This is the basic "religious hypothesis" and, although there is much in contemporary culture that discourages people from making such a hypothesis, there is "no scientific reason why we cannot believe the religious hypothesis that the world is meaningful."<sup>231</sup> Polanyi's post-critical reformation of epistemology and philosophy of science, in Prosch's account of Polanyi, have thus opened the way to "restoring the possibility of our belief in those intangible, transnatural comprehensive entities that enable us to acquire more integrated and meaningful selves."<sup>232</sup>

In the final chapter of this section entitled "Treatment," Prosch turns from the review of Polanyi's ideas about art and religion to a consideration of Polanyi's liberal political vision. This might seem an odd concluding note for his summary of Polanyi's philosophical views, but in fact it is not, for, as Prosch makes clear, all of the broader human endeavors of the noösphere that Polanyi affirms as worthy pursuits are possible only in a certain kind of social environment. Thus Polanyi was vigilantly "concerned about securing the conditions essential for these activities."<sup>233</sup> Prosch's discussion thus returns, in part, to some of the themes in the opening two chapters of his book. He discusses

Polanyi's account of freedom and his criticisms of Marxism, fascism, utilitarianism, and pragmatism as popular modern perspectives that all fail to recognize the importance of specialized communities (e.g., science, law, religion, etc.) that serve transcendent ideals. Later, he suggests how Polanyi's views are an outgrowth of his account of polycentrism, as it applies to culture. Governments should not interfere in the name of purported social utility or public good with the spontaneous initiatives within specialized communities where members serve ideals such as truth. Prosch however somewhat oversimplifies Polanyi when he makes it appear that serving transcendent ideals is an ultimate commitment that is simply either made or not made and when it is made it is an acceptance of the heritage of the past. Polanyi uses the term "calling" to talk about a person's vocation, but Prosch neglects to emphasize that Polanyi uses the term broadly to point to the opportunities that are present in any person's historical-social setting. Polanyi consistently resists deterministic modern historicist views and Prosch should make such convictions clearer.

In this chapter, Prosch includes a discussion of Polanyi's opposition to the "planned" science movement, and he links this to a lengthy review of Polanyi's contributions to economics and a discussion of Polanyi's ideas about economics education. Regarding Polanyi's account of economics, Prosch provides more detail than any of the other books reviewed here (although Mitchell's book is also very insightful about Polanyi's work in economics). Polanyi supported a free economy, "centering around open markets, supply-and-demand pricing, and profits," but about the market economy Polanyi also had "an understanding of its deficiencies, and how to remedy them, he held, was not at all based on the notion that any of these economic matters entailed transcendently spiritual or ideal ends, intrinsically valuable in themselves."<sup>234</sup> In no other publication that I know has any scholar so carefully as Prosch laid out (making excellent use of archival materials) Polanyi's pragmatic discussions about how to eliminate some of the undesirable effects of a market economy. Polanyi believed that it was possible to preserve a basic polycentric system



and yet also make significant socially desirable modifications of the system of spontaneous order that the market establishes. Nevertheless, Polanyi recognized that even while humans work for the moral improvement of society “we must acknowledge that we can reduce unjust privileges only by graded states, and never completely.”<sup>235</sup> Prosch suggests that Polanyi thought Moral ideals, like the meaningful artifacts of art and religion, are purposes bearing on eternity which human beings seem to need. Polanyi sternly warned about the modern dangers of moral perfectionism and Polanyi is thus “an incurable moralist.”<sup>236</sup> Human beings “have moral duties” but Polanyi “did not think that religion was the source of all our moral duties nor of all the other duties entailed by the noöspheric firmament of obligations which we have set over ourselves.”<sup>237</sup> While religion for Polanyi “seemed to have been connected with morality primarily in making us better able to live with our necessarily limited moral achievements,”<sup>238</sup> Polanyi was not prescribing religion as the cure for the problems of the modern mind. In Prosch’s view, it was a recovery of belief in transcendent ideals that grounds a free society; this recovery most concerned Polanyi. Polanyi argued, “we needed to develop an epistemology adequate to humane thought and to use it in the reformation of those views of man which will lend an ontological basis for his grasp of his own dignity and high calling in the universe.”<sup>239</sup>

All things considered, Harry Prosch’s *Michael Polanyi: A Critical Exposition* is a thoughtful book about Polanyi’s philosophy written by an author who co-authored Polanyi’s last book *Meaning*, a book that could never have been published without his help. Prosch’s “critical exposition” presents Polanyi’s thought from the point of view of this final co-authored Polanyi book. Certainly a novice Polanyi reader can make good use of the first three sections of *Michael Polanyi: A Critical Exposition* to get a foothold helpful for hiking the difficult terrain of Polanyi’s primary texts. Prosch’s command of Polanyi’s ideas is masterful, but readers should also be aware that his interpretation of some elements of Polanyi’s thought is overtly shaped to be a counter to earlier introductions to Polanyi’s thought.

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#### NOTES

1. Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (Chicago: University of Chicago Press, 1958; New York: Harper & Row/Torchbook, 1964). References are to the Torchbook edition.

2. Even Friedrich Hayek, one of Polanyi's long-standing friends, made this confession: "I never got really through Polanyi's *Personal Knowledge*, though I made two attempts, but on both occasions got lost as soon as I could not give my continuous and exclusive attention to his exposition." (Letter to Ludwig M. Lachmann, 24 November 1959, Hayek Archives, box 32, folder 2, Hoover Institution, Stanford University). For this tidbit, I am indebted to Eric Howard's interesting paper "Why Didn't Hayek Finish Reading *Personal Knowledge*? An Investigation into the Methodological and Philosophical Relationship between Fredrich Hayek and Michael Polanyi" (delivered at the November 2004 Southern Economic Association Annual Meeting). The introduction to an important collection of essays on Polanyi's thought, Thomas A. Langford and William H. Poteat's *Intellect and Hope: Essays in the Thought of Michael Polanyi* (Durham, NC: Duke University Press, 1968), is titled "Upon First Sitting Down to Read *Personal Knowledge*." Its opening sentence proclaims "*Personal Knowledge* is an exasperating book" (p. 3). The editors thought it important to address the difficulty of the book and say something about its rhetoric.

3. For an account of how Scott somewhat unexpectedly became acquainted with Polanyi and his philosophy and later came to be asked to write a biography see Phil Mullins and Marty Moleski, S.J., "Obituary for William T. Scott," *Tradition & Discovery* 25, no. 3 (1998–99): 5–9. For Scott's early and positive review of *Personal Knowledge*, see William T. Scott, "Polanyi's Theory of Personal Knowledge: A Gestalt Philosophy," *Massa-*

*chusetts Review* 3, no. 2 (1962): 349–68.

4. Michael Oakeshott, “The Human Coefficient,” *Encounter* 11, no. 3 (1958): 77–80.

5. In a letter to the editor in a subsequent issue of *Encounter*, Marjorie Grene (who worked for years with Polanyi in putting together *Personal Knowledge*) provided a very interesting response to Oakeshott’s review. She acknowledged “how difficult philosophical innovation is” and then very circumspectly outlined in two pages, the case Polanyi makes, section by section, and why he makes in the way he does. Her brief discussion might still be useful to those struggling with *Personal Knowledge*. See Marjorie Grene, “Personal Knowledge,” *Encounter* 11, no. 4 (1958): 67–68.

6. It is for this reason that I am suspicious about the common suggestion that novices should start reading Polanyi by reading *The Study of Man* or *The Tacit Dimension* (brief late works) rather than *Personal Knowledge*. Those who already have mastered the basic ideas in Polanyi perspective do find these books particularly illuminating but uninitiated readers find them puzzling. Polanyi himself I think was not very helpful when he suggested in the preface (p. 9) to *The Study of Man* (Chicago: University of Chicago Press, Phoenix Books edition, 1963) that this book might “be read as an introduction to *Personal Knowledge*.” For those seeking an alternative to the daunting *Personal Knowledge*, I suggest Polanyi’s book from the mid-forties, *Science, Faith, and Society* (London: Oxford University Press, 1946; Chicago: University of Chicago Press, 1964) whose 1964 reprint includes a straightforward introduction (pp. 7–19) written in 1963 after his philosophical ideas developed further.

7. Polanyi certainly did not belong to any of the mid-twentieth-century philosophical camps, the Anglo-American, the Marxist, or the Continental. He attacked many of the assumptions of the former two camps and likely did not know much, at least at the time he was writing *Personal Knowledge*, about phenomenology and its variants. In *The Tacit Dimension* (Garden City, NY: Doubleday & Co., 1966), Polanyi suggests that becoming a

philosopher was something of an afterthought (see p. 3). Polanyi provides a brief discussion of his own development as a thinker in his 1963 introduction (see pp. 7–19) to the reprint of his 1946 volume *Science, Faith and Society* noted above. Most of the introductions treated in this essay try to clarify how Polanyi came to be a philosopher and how he tried to reconceive the nature of philosophical reflection. That reconception often makes professional philosophers uncomfortable. The uniqueness of Polanyi's contributions to philosophy, like some of his contributions to science and economics, are likely the result of the fact that he had very broad interests and knowledge which he tried to integrate, but he was often not well socialized by the mainstream suppositions in particular disciplines, even scientific ones. The Mitchell book (see n. 12 below) discussed below as well as the new Polanyi biography (see n. 15 below) emphasize this point. For an interestingly similar discussion of Polanyi's innovations in chemistry see P. H. Plesch, "Michael Polanyi and the Discovery of Co-Catalysis," *Journal of Polymer Chemistry* 42, no. 7 (April 1, 2004): 1537–46.

8. See the chapters in *Personal Knowledge* with these titles (pp. 132–243).

9. *Ibid.*, xi.

10. *Ibid.*, xiii.

11. *Ibid.*, 327–407.

12. Mark T. Mitchell, *Michael Polanyi: The Art of Knowing* by (Wilmington, DE: ISI Books, 2006).

13. *Ibid.*, xii.

14. *Ibid.*, xiii.

15. William Taussig Scott and Martin X. Moleski, S.J., *Michael Polanyi: Scientist and Philosopher* (New York: Oxford University Press, 2005). This biography was a long time in the making. Bill Scott, a physicist, philosopher, and friend of Polanyi, began the work shortly after Polanyi's death in 1976. He gathered volumes of material but his own debilitating illness and death prevented him from completing the book. Marty Moleski took on the task of completing the biography when it was clear that Scott would

never be able to finish his work, and this 350-page volume was published only in 2005. As the title suggests, this biography works in some detail through Polanyi's extensive work as a research scientist (he published over 200 scientific papers) as well as his contributions to other areas. The biography is a major contribution to Polanyi scholarship but most of the introductory books reviewed here provide a short biographical sketch that makes clear how Polanyi's interests and ideas arose in the context of his experience.

16. Mitchell, *Michael Polanyi: The Art of Knowing*, 11.

17. Mitchell later notes (p. 118) that some (at least Drusilla Scott) have suggested Polanyi's Roman Catholic baptism may have been largely pragmatically motivated. But see also Paul Knepper's discussion of Polanyi and Roman Catholicism ("Michael Polanyi and Jewish Identity," *Philosophy of the Social Sciences* 35 (2005): 271–74), as well as William Scott's comment on a 1916 Polanyi letter ("The Question of A Religious Reality: Commentary on the Polanyi Papers," *Zygon* 17, no. 1 [March 1982]: 86) which Knepper uses.

18. Mitchell, *Michael Polanyi: The Art of Knowing*, 20.

19. *Ibid.*, 22.

20. *Ibid.*

21. *Ibid.*, 25. Mitchell comes back to emphasize the same point in his last chapter: "While it is correct to situate Polanyi's work in the broad context of classical liberalism, he was no apologist for laissez-faire capitalism. He believed there is a proper and necessary role for government, and that this extends well beyond the minimalist 'night-watchman' state" (p. 138).

22. *Ibid.*, 25.

23. *Ibid.*, 35.

24. *Ibid.*, 33.

25. See especially Polanyi's discussion in his important 1941 article "The Growth of Thought in Society" (*Economica* 8 [1941]: 429–30, 438–40).

26. *Ibid.*, 438.

27. Mitchell, *Michael Polanyi: The Art of Knowing*, 46.

28. *Ibid.*, 50.
29. *Ibid.*, 35–36.
30. *Ibid.*, 42.
31. *Ibid.*, 37.
32. *Ibid.*, 55.
33. *Ibid.*, 57.
34. *Ibid.*, 58.
35. Polanyi, *Personal Knowledge*, ix, 264–272.
36. Polanyi, *The Tacit Dimension*, x.
37. Mitchell, *Michael Polanyi: The Art of Knowing*, 62
38. *Ibid.*, 67.
39. *Ibid.*, 67.
40. *Ibid.*, 69.

41. Walter Gulick has pointed out in a recent review of Mitchell's book that Mitchell sometimes has an odd way of describing the functional structure of tacit knowing. See Walter Gulick, "Polanyi as a Political and Economic Thinker: Mark Mitchell's Account," *Tradition & Discovery* 34, no. 2 (2007–8): 34. See also Mitchell's response to this point in the same article in "Reviewing the Reviews," 37.

42. Marjorie Grene suggests that much of the contemporary philosophical discussion of realism in philosophy of science has formalistic suppositions about knowledge and misguided notions about perception rooted in empiricism. She suggests the contemporary debate about realism and antirealism is an in-house debate about "scientific realism." (See Greene, *A Philosophical Testament* [Chicago and LaSalle, IL: Open Court, 1995], 113–26.) Mitchell's intention is simply to introduce Polanyi's realism and he does a good job of this. Grene's discussion of realism, however, makes clear that there is a disjunction between Polanyi's realism and contemporary philosophical discussions. It might be helpful to some Polanyi readers to know about this disjunction at the beginning. I have recently suggested that Polanyi's realism perhaps should be linked to ideas about realism that Charles S. Peirce held. Peirce's realism and Polanyi's realism have more in common with medieval realism than contemporary discussions of realism.

See my article “Comprehension and the ‘Comprehensive Entity’: Polanyi’s Theory of Tacit Knowing and Its Metaphysical Implications,” *Tradition & Discovery* 33, no. 3 (2006–7): 35–38.

43. Mitchell, *Michael Polanyi: The Art of Knowing*, 85.

44. Few recent thinkers have absorbed Polanyi’s ideas more deeply than the late Charles McCoy. In all of his publications, he emphasizes the implications of the Polanyian theme that Mitchell here calls “embeddedness.” McCoy contends that the “Polanyian Revolution unfolding around us shows that we still occupy the particularity of human location in our knowing and action. Polanyi provides a method that combines critical rigor and impetus for discovery with the pre-critical respect for tradition, culture, community, and faith, which he brings together in his post-critical thought. In post-critical perspective, uncritical adherence to critical method leads toward an objectivism in knowing that does not take account of the tacit coefficient upon which it depends, and is as inadequate as the post-modern rejection of the modern that leaves itself adrift without connection to a context of tradition, community, and commitment. Post-critical thought discloses the pre-critical passion and faith underlying critical rigor and the potential of pre-critical traditionalism as a springboard for discovery, thus providing fiduciary roots in tradition and community for post-modern creativity.” See Charles McCoy, “Ethics For The Post-Critical Era: Perspectives from the Thought of Michael Polanyi,” *Tradition & Discovery* 29, no. 1 (2002–3): 9.

45. Polanyi, *Personal Knowledge*, 311.

46. Mitchell, *Michael Polanyi: The Art of Knowing*, 101.

47. *Ibid.*, 106.

48. *Ibid.*, 114.

49. Richard Gelwick, “Michael Polanyi: *Credere Aude*: His Theory of Knowledge and Its Implications for Christian Theology,” Th.D. dissertation, Pacific School of Religion, 1965, p. 11, n. 8. See also my discussion of Polanyi, Oldham, and Polanyi’s involvement in Oldham’s discussion groups in “Michael Polanyi and J. H. Oldham: In Praise of Friendship,” *Appraisal* 1, no. 4 (October 1997): 179–89.

50. In his notes and to some degree in his text, Mitchell does provide information that would allow the interested reader to follow up on much of the scholarly discussion about Polanyi's ideas about religion. In the discussion of the Prosch book below, I follow up on some of this. In a nutshell, one might say the scholarly discussion first concerned (A) how to interpret what Polanyi suggested about the ontological status of known religious realities. Interest in this question led to (or actually was bound up with) debate about broader questions. First there emerged questions about (B) the relation between views of religion and the arts and science in *Personal Knowledge* and in Polanyi's last book *Meaning* co-authored by Harry Prosch. Some accused Harry Prosch of misrepresenting Polanyi in *Meaning*. Others, like Marjorie Grene, Polanyi's closest philosopher friend who was the most important collaborator helping to produce *Personal Knowledge*, thought Polanyi simply failed to think carefully through his late ideas about art, myth, and religion. Subsequently, there was a broader debate among Polanyi scholars about (C) the nature of Polanyi's metaphysical orientation; what sort of realist was Polanyi? As I discuss below, the question about the ontological status of known religious realities (A) first emerged in reviews that Harry Prosch wrote of Richard Gelwick's introduction to Polanyi, *The Way of Discovery* (treated below), and Drusilla Scott's introduction to Polanyi, *Everyman Revived: The Common Sense of Michael Polanyi* (treated below). Subsequently there was discussion of issues (particularly A and B) at the annual meetings of the Polanyi Society and in a 1982 issue of *Zygon* (17, no. 1) on science and religion in the thought of Polanyi. Over the years, there have been a number of articles in the Polanyi Society periodical *Tradition & Discovery* that have treated all three questions (A, B, and C); Mitchell mentions several of these. Harry Prosch wrote some of these *Tradition & Discovery* articles, but he also addresses these questions (A, B, and C) in his book, *Michael Polanyi, A Critical Exposition* (treated below). Very recently (probably after Mitchell's book was in press), after the death of Harry Prosch, Polanyi biographer Marty Moleski and I looked very carefully at the



substantial correspondence (most of which is preserved in the Polanyi Archival Collection at the University of Chicago Library) between Prosch and Polanyi about *Meaning*. Our essay “Harry Prosch: A Memorial Re-Appraisal of the Meaning Controversy,” tries to set the historical record straight about the Prosch-Polanyi collaboration. The article also criticizes some of the statements about Prosch and Prosch’s role made by Thomas Torrance, the first literary executor for Polanyi. Some of what Torrance says is simply unreliable. Our article tracks the decades-long discussion among Polanyi scholars in great detail; anyone interested can use it to supplement Mitchell’s text and notes. (See “Harry Prosch: A Memorial Re-Appraisal,” *Tradition & Discovery* 32, no. 2 (2005–06): 8–24.

51. See, for example, my own essay “Religious Meaning in Polanyi’s *Personal Knowledge*,” *Polanyiana* (vol. 2, no. 4/vol.3, no. 1) 1992/1993: 75–83.

52. Mitchell, *Michael Polanyi: The Art of Knowing*, 128.

53. *Ibid.*, 135.

54. *Ibid.*, 140–41.

55. *Ibid.*, 162.

56. *Ibid.*, 165.

57. Some of the themes in Mitchell’s discussion of “Polanyi’s Legacy” (*Ibid.*, 162–169), in particular his analysis of consumerism, suggest ways that a Polanyian philosophical perspective could be fruitfully linked to the work of a figure like Albert Borgmann, an insightful philosopher of technology.

58. One of Richard Allen’s most important publications is his 1997 collection of Polanyi essays, titled *Society, Economics, and Philosophy: Selected Papers* (New Brunswick, NJ: Transaction Publishers, 1997), that supplements the other major collection of Polanyi essays, *Knowing and Being: Essays by Michael Polanyi* (Chicago: University of Chicago Press, 1969), that Marjorie Grene put together while Polanyi was still alive. The twenty-five essays in Allen’s collection range from Polanyi’s earliest non-scientific writing (1917) to publications near the end of his life (1972). Allen selected articles that Polanyi had not incorporated

in other books, articles which cover not only philosophy of science but also topics in economics, politics, religion and aesthetics. In this book, Allen provides a remarkably concise introduction to the collection and to Polanyi's life and work; and he also assesses Polanyi's place in the history of Western thought. There are also two appendices that can be helpful to anyone seeking some orientation in Polanyi's writing. One of these is an annotated bibliography of Polanyi's writing, and the other is a set of summaries of Polanyi articles that are not incorporated in Polanyi's major books or in essay collections. More recently, Richard Allen and Struan Jacobs have published *Emotion, Reason, and Tradition* (Burlington, VT: Ashgate, 2005), which is a good collection of secondary essays on Polanyi's ideas that they wrote or invited from competent Polanyi scholars. For detailed discussions of both of these collections, see my reviews in *Tradition & Discovery* 25, no. 3 (1998–99): 33–36 and 32, no. 2 (2005–6): 53–59.

59. Richard Allen, *Thinkers of Our Time: Polanyi* (London: Claridge Press, 1990).

60. See Andy Sanders' review in *Tradition & Discovery* 20, no. 2 (1993–1994): 43–44. Another reviewer, N. E. Wetherick, contends that Allen's introduction is written for an audience already interested in Polanyi's epistemology because they are Christian "religious thinkers" (*Tradition & Discovery* 20, no. 2 [1993–94]: 45–46).

61. See Allen's letter to the editor, *Tradition & Discovery* 20, no. 3 (1993–94): 4.

62. Allen, *Thinkers of Our Time: Polanyi*, 9.

63. *Ibid.*, 9.

64. *Ibid.*, 10.

65. *Ibid.*, 20.

66. For example, Allen notes that objectivism holds that emotional and personal involvement in knowing is a defect and it therefore proclaims as important detachment and a "value-free" perspective. Chapter 6 in *Personal Knowledge*, titled "Intellectual Passions," makes a solid case that in the practice of science those

who do research are passionately involved. In fact Polanyi shows that intellectual emotions “have a constitutive and guiding role in scientific discovery” (p. 28).

67. Allen, *Thinkers of Our Time: Polanyi*, 33.

68. *Ibid.*, 56.

69. *Ibid.*, 54.

70. *Ibid.*, 59.

71. *Ibid.*, 73.

72. Drusilla Scott, *Everyman Revived: The Common Sense of Michael Polanyi* (Lewes, Sussex: Book Guild, 1985; Grand Rapids, MI: Eerdmans, 1995).

73. *Ibid.*, ii.

74. *Ibid.*

75. *Ibid.*, 7.

76. *Ibid.*, 15.

77. *Ibid.*, 16.

78. *Ibid.*, 20.

79. *Ibid.*

80. *Ibid.*, 27.

81. Although she does not make a great deal of use of the 1977 Gelwick introduction treated below, Scott’s introduction resembles the Gelwick book insofar as she orients much of her larger discussion around an account of discovery.

82. *Ibid.*, 34.

83. *Ibid.*, 45.

84. *Ibid.*, 51.

85. *Ibid.*, 60.

86. *Ibid.*, 64.

87. *Ibid.*, 68.

88. *Ibid.*, 73–74.

89. Polanyi, *Personal Knowledge*, 203–248.

90. Scott, *Everyman Revived*, 81.

91. *Ibid.*, 89.

92. *Ibid.*, 91.

93. *Ibid.*, 90.

94. *Ibid.*, 95.

95. *Ibid.*, 99.

96. *Ibid.*, 103.

97. The best single short essay evaluating Polanyi's achievement as a philosopher, which also outlines how he is regularly misunderstood as well as how he sometimes misunderstood the implication of his own ideas, is Marjorie Grene's "Tacit Knowing: Grounds for a Revolution in Philosophy," *Journal of the British Society for Phenomenology* 8, no. 3 (October 1977): 164–71.

98. Scott, *Everyman Revived*, 145–46.

99. *Ibid.*, 149.

100. *Ibid.*, 158.

101. *Ibid.*, 166.

102. See Polanyi's discussion in Michael Polanyi and Harry Prosch, *Meaning* (Chicago: University of Chicago Press, 1975), 125.

103. Scott, *Everyman Revived*, 173.

104. *Ibid.*, 176.

105. *Ibid.*, 180.

106. *Ibid.*, 184.

107. *Ibid.*, 185.

108. *Ibid.*, 186.

109. See N. E. Wetherick's review, 45, cited above in note 60.

110. Richard Gelwick, *The Way of Discovery: An Introduction to the Thought of Michael Polanyi* (New York: OUP, 1977; Eugene, OR: Wipf & Stock, 2004).

111. This early bibliography goes up to 1968. See Richard L. Gelwick, "A Bibliography of Michael Polanyi's Social and Philosophical Writings," *Intellect and Hope: Essays in the Thought of Michael Polanyi*, 432–446. Subsequent bibliographies are more comprehensive. See especially those in the biography *Michael Polanyi: Scientist and Philosopher*, 327–350, *Society, Economics and Philosophy: Selected Papers of Michael Polanyi*, 361–389, and Harry Prosch's *Michael Polanyi: A Critical Exposition*, 319–346 (cited and discussed below). Maben Walter Poirier has compiled a bibliography that includes not only Polanyi's nonscientific writing but also a large collection of secondary writing. See

Maben Walter Poirier, *A Classified and Partially Annotated Bibliography of Michael Polanyi, the Anglo-Hungarian Philosopher of Science* (Toronto: Canadian Scholars' Press, 2002).

112. Galwick, *The Way of Discovery*, xii.

113. *Ibid.*

114. *Ibid.*, xiii

115. *Ibid.*, xiv.

116. This is for Polanyi a rich term with many associations. There are more than thirty references to "heuristic" in the index to *Personal Knowledge*.

117. Gelwick, *The Way of Discovery*, xviii.

118. *Ibid.*, 3.

119. *Ibid.*, 6

120. *Ibid.*, 11.

121. *Ibid.*, 7.

122. *Ibid.*, 9.

123. *Ibid.*, 12–13.

124. *Ibid.*, 125.

125. *Ibid.*, 15.

126. *Ibid.*, 26.

127. *Ibid.*

128. *Ibid.*, 26–27.

129. *Ibid.*, 27.

130. *Ibid.*, 28.

131. *Ibid.*, 27.

132. *Ibid.*, 30.

133. *Ibid.*, 31.

134. *Ibid.*, 82.

135. *Ibid.*

136. *Ibid.*, 84.

137. *Ibid.*, 83–84.

138. *Ibid.*, 84.

139. *Ibid.*, 84–85.

140. *Ibid.*, 84.

141. *Ibid.*, 97.

142. *Ibid.*, 98.

143. *Ibid.*

144. *Ibid.*, 157.

145. Jerry H. Gill, *The Tacit Mode: Michael Polanyi's Postmodern Philosophy* (Albany, NY: SUNY Press, 2000).

146. Another interesting book on Polanyi's thought that is, strictly speaking, not an introduction is Andy Sanders, *Michael Polanyi's Post-Critical Epistemology: A Reconstruction of Some Aspects of 'Tacit Knowing'* (Amsterdam: Rodopi, 1988). Sanders's book might be a helpful aid to understanding Polanyi for a reader solidly grounded in analytic philosophy. He identifies the aims of his book as follows: "My aim, then, is not a general exposition of Polanyi's 'Life and Work' or his 'Thought' but, rather, to clarify and develop certain aspects of his work *in connection with* some contemporary positions within analytical philosophy (broadly so called)" (i).

147. Gill, *The Tacit Mode*, xi.

148. *Ibid.*, 1.

149. *Ibid.*, 10.

150. *Ibid.*, 31.

151. *Ibid.*

152. *Ibid.*, 34.

153. *Ibid.*

154. *Ibid.*, 38.

155. *Ibid.*

156. *Ibid.*, 44.

157. *Ibid.*, 51.

158. *Ibid.*, 54.

159. *Ibid.*

160. *Ibid.*, 57.

161. *Ibid.*

162. *Ibid.*

163. *Ibid.*, 59.

164. *Ibid.*, 61.

165. *Ibid.*, 10.

166. *Ibid.*, 71.

167. *Ibid.*, 72.

168. *Ibid.*, 74.

169. *Ibid.*, 77.

170. *Ibid.*, 80.

171. *Ibid.*, 83.

172. *Ibid.*, 84.

173. *Ibid.*, 83.

174. *Ibid.*, 84.

175. *Ibid.*, 85.

176. *Ibid.*

177. *Ibid.*, 91.

178. *Ibid.*, 107.

179. *Ibid.*, 137.

180. Harry Prosch, *Michael Polanyi: A Critical Exposition* (Albany, NY: SUNY Press, 1986).

181. *Ibid.*, 9.

182. *Ibid.* Note also Prosch's introductory comment (6) in which he laments that philosophers have ignored or discounted the importance of *Polanyi*, leaving Polanyi to sociologists, economists, psychologists, scientists, and theologians. He notes that in his book he hopes "to be able to show to my own doubting colleagues in philosophy that his key term, "personal knowledge," which sounds to many something like "square circle," is a very meaningful and important term when understood in the context of his whole philosophy, and that, moreover, in its proper meaning, it is not even a startling innovation" (p. 6).

183. Michael Polanyi and Harry Prosch, *Meaning* (Chicago: University of Chicago Press, 1975).

184. Prosch, *Michael Polanyi: A Critical Exposition*, 2.

185. *Ibid.*, 1. Although the comments on *Meaning* that I quote come primarily from the introduction of Prosch's *Michael Polanyi: A Critical Exposition*, essentially the same account is in the introductory material of *Meaning* and in the archival correspondence from Prosch to Polanyi in the Polanyi archives.

186. See the extensive analysis of the Prosch-Polanyi correspondence which Martin Moleski and I provide in "Harry Prosch: A Memorial Re-Appraisal of the *Meaning* Controversy," *Tradi-*

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*tion & Discovery* 32, no. 2 (2005–6): 8–24. Some of the comments briefly noted below are explored in more depth in this essay.

187. Prosch, *Michael Polanyi: A Critical Exposition*, 2.

188. *Ethics* 82 (January 1979): 211–16.

189. My introduction to the set of *Zygon* articles noted below makes an effort to chart the early history of the scholarly discussion. See Phil Mullins, “The Spectrum of Meaning—Polanyian Perspectives on Science and Religion,” *Zygon* 17, no. 1 (March 1982), 3–8. The article Moleski and I wrote after Prosch’s death on the *Meaning* controversy, cited above, (“Harry Prosch: A Memorial Re-Appraisal of the *Meaning* Controversy”) updates the record of the discussion.

190. See articles by Ronald Hall, Bruce Haddox, Richard Gelwick, Harry Prosch, John Apczynski, Durwood Foster, and William Scott in *Zygon* 17, no. 1 (March 1982).

191. Richard Gelwick, “Science and Reality, Religion and God: A Reply to Harry Prosch,” *Zygon* 17, no. 1 (March 1982), 25–40. Harry Prosch, “Polanyi’s View of Religion in *Personal Knowledge*: A Response to Richard Gelwick,” *Zygon* 17, no. 1 (March 1982), 41–48.

192. Harry Prosch, review of *Everyman Revived*, *Tradition & Discovery* 13, no. 2 (1985–86): 20–22.

193. I don’t think Prosch would dispute many of the points identified here in my attempt to carefully and succinctly summarize the views of Gelwick and Scott. However, Gelwick and others ultimately imply that Prosch’s interpretation of Polanyi’s view of matters such as the reality of God undermines this area of inquiry. Prosch himself did not think this was the case. He was won over to what he insists was Polanyi’s way of thinking about religion. Prosch’s interpretation is treated below in the discussion of one chapter of Prosch’s book. But Gelwick and others contend that making the “existence” of comprehensive realities such as God dependent upon the articulate system of a community or religious group is a step beyond Polanyi and is out of step with Polanyi’s earlier discussion of the range of human inquiry in *Personal Knowledge* and *The Study of Man*. This scholarly debate in the late



seventies and eighties about Polanyi's metaphysics led eventually to discussions about "Polanyi's realism" that became a set of essays in a special issue of *Tradition & Discovery* 26, no. 3 [1999–2000]).

194. Prosch, *Michael Polanyi: A Critical Exposition*, 1.

195. For further details about the history of the book, based on correspondence, see Mullins and Moleski, "Harry Prosch: A Memorial Re-Appraisal of the *Meaning* Controversy," cited above in n. 185.

196. Prosch, *Michael Polanyi: A Critical Exposition*, 9.

197. *Ibid.*, 7.

198. My review of *Michael Polanyi: A Critical Exposition* in *Zygon*, 23 no. 2 (June 1988): 215–20 provides a careful summary of and response to arguments that Prosch develops in this fourth section (seven chapters) of his book.

199. Prosch, *Michael Polanyi: A Critical Exposition*, 8.

200. *Ibid.*

201. *Ibid.*, 205.

202. *Ibid.*, 17.

203. *Ibid.*, 28.

204. *Ibid.*, 65.

205. *Ibid.*, 77.

206. *Ibid.*, 78.

207. *Ibid.*, 91.

208. *Ibid.*, 112.

209. *Ibid.*, 115.

210. *Ibid.*, 124.

211. *Ibid.*, 133.

212. *Ibid.*, 127.

213. *Ibid.*, 135.

214. *Ibid.*, 134–135.

215. *Ibid.*, 136. Polanyi introduces the terms "noögenesis" and "noösphere" from Teilhard de Chardin only in the last chapter of *Personal Knowledge* (p. 388), where "noösphere" designates "the lasting articulate framework of thought," a framework which Polanyi seems to think emerges in human evolution-

ary history with the invention of language. Polanyi seems to hold that about 50,000 years ago human beings became no longer mute and that this was a turning point after which it makes sense to speak of human beings as acquiring and preserving in some manner “human knowledge.” Polanyi speaks of this turning point as “the rise of human thought” (p. 389) and as the “second major rebellion against meaningless inanimate being” (p. 389). This term from de Chardin is likely introduced only at the end of *Personal Knowledge* because Polanyi thought it succinctly captured something that he thought was overlooked in most discussions of evolution. Polanyi struggled with the final chapter of *Personal Knowledge* and was working on it almost up until the book was published in 1958. He apparently read the French edition of *The Phenomenon of Man* when it was published in 1955 or not long afterward. See my reflections on the discussion Polanyi had with J. H. Oldham about appropriating de Chardin’s term in his last chapter of *Personal Knowledge*, and more generally on Polanyi’s very mixed review of de Chardin’s thought (“Michael Polanyi on Teilhard de Chardin,” *Appraisal* 4, no. 4 [October 2003]: 195–200). *Meaning*, as well as Prosch’s *Michael Polanyi: A Critical Exposition*, make a great deal of the “noösphere.” I don’t believe the context in which the term emerges in *Personal Knowledge* and the meaning it has in that context suggest the kind of fundamental metaphysical/ontological distinction Prosch insists is basic to Polanyi’s philosophy.

216. See my discussion of Polanyi’s link to the medieval rather than the modern philosophical tradition in Phil Mullins, “Comprehension and the ‘Comprehensive Entity’: Polanyi’s Theory of Tacit Knowing and Its Metaphysical Implications,” *Tradition & Discovery* 33, no. 3 (2006–7): 26–43.

217. Prosch, *Michael Polanyi: A Critical Exposition*, 137.

218. *Ibid.*

219. *Ibid.*, 139.

220. *Ibid.*

221. *Ibid.*, 145.

222. *Ibid.*, 158.

- 223. *Ibid.*, 162.
- 224. *Ibid.*, 167.
- 225. *Ibid.*, 169.
- 226. *Ibid.*
- 227. *Ibid.*, 171.
- 228. *Ibid.*, 172.
- 229. *Ibid.*, 173.
- 230. *Ibid.*
- 231. *Ibid.*, 175.
- 232. *Ibid.*
- 233. *Ibid.*, 177.
- 234. *Ibid.*, 198.
- 235. *Ibid.*, 195.
- 236. *Ibid.*, 197.
- 237. *Ibid.*
- 238. *Ibid.*
- 239. *Ibid.*