
Practical Reasoning as Personal Knowing: Pedagogical Implications of Polanyi's Insights into the Development of the Moral Self

Fifty years after the publication of *Personal Knowledge*, philosophers and theologians have appropriated insights from the works of Michael Polanyi into their projects, but comparatively few ethicists have done so.¹ This situation is something of a surprise for several reasons. The first is that Polanyi's account of personal knowledge is motivated by an intensely moral concern, that of moral inversion. This term serves as Polanyi's answer to a question that many people were asking in the post–World War II era: “How could the destructive, totalitarian regimes of Nazi Germany, fascist Italy, and the communist Soviet Union have arisen in the cultured, liberal West?” As Polanyi tells the story, moral reflection is severely damaged by epistemologies developed in the modern period in which thinkers come to judge all human knowledge by what they call “scientific objectivity.” The result is that Western societies develop a deep skepticism about the truth of moral standards. At the same time, however, human beings continue to exhibit moral passions that will find expression—even when de-coupled from belief in the truth of moral standards. Those passions, according to Polanyi, become inverted in such a way that they end up directed toward ends that ultimately destroy, rather than sustain, a free society.² Because of this moral vision at the heart of his work, one would expect more ethicists to have paid attention.

Moreover, Polanyi's epistemology promises to offer resources for resolving certain ongoing problems in ethics. Informed by Gestalt psychology, he specifically calls knowledge personal or tacit in order to overcome the positivistic divide between objec-

tive knowledge and subjective opinion.³ This bifurcation of knowledge finds its parallels in contemporary debates between moral dogmatists and emotivists. The former group argues for the existence of clear moral truths, whereas the latter see moral statements only as expressions of subjective preferences.⁴ A final reason that ethicists should pay attention to Polanyi is that he argues that all human knowing is personal in nature, and this must, of necessity, include moral knowing.⁵ Unfortunately, Polanyi himself never develops this point in any detail, attending instead to religion, art, and politics—apparently leaving to later scholars the task of sorting out the nature of moral knowing.⁶

Moral knowing therefore is a logical place to begin in connecting Polanyi's work with ethics. The traditional terms for moral knowing are "practical reason" and "prudence," which have been understood to consist of both intellectual virtue and moral virtue. Practical reasoning thus entails sound reasoning about the particulars needed to attain the good life in community with others on the part of someone whose passions are appropriately ordered toward what is truly good. This virtue enables the agent to extend knowledge from what is known to what is novel and to act accordingly. Moreover, proficiency in practical reasoning is taken to be synonymous with being virtuous, so that the development of practical reasoning can be assumed to be synonymous with the formation of the moral or virtuous self.⁷

Albert Jonsen and Stephen Toulmin have spearheaded an attempt to recover and rehabilitate practical reason as the model for moral knowing in contemporary ethics, in part because of what they perceive to be its usefulness in dealing with the intractable character of moral debate in contemporary society.⁸ They contrast practical reasoning with theoretical reasoning, which takes geometry as its model and works by applying universal starting points to the present situation in order to arrive at conclusions that are necessarily and universally true (*AC* 24-36). In contrast, practical reasoning begins with presumptions established by previous cases that become paradigms for moral reflection. New cases, when they arise, are compared to these para-

digms; sometimes they may connect in a straightforward manner, at other times their connections may be ambiguous, marginal, or even so radically different as to call established presumptions into question (AC 323). In order to explain more concretely what they mean by practical reasoning, Jonsen and Toulmin use clinical medicine as a paradigm. If a doctor is to cure the patient's malady, the doctor must connect her knowledge of medicine with the particulars of a patient's symptoms. The doctor makes presumptions and treats the patient on the basis of on those presumptions, barring exceptional circumstances, in which case the presumptive treatment would be changed to something else. There is obviously a certain degree of give and take in this process that Jonsen and Toulmin describe as "a matter of personal judgment" and "pattern recognition" (AC 36–40). It is here that a connection between Polanyi and these two thinkers becomes explicit, for Polanyi often compares personal knowing to the making of clinical judgments. "Medicine offers readily an illustration of what I have in mind here," says Polanyi, for "only clinical practice can teach [a medical student] to integrate the clues observed on an individual patient to form a correct diagnosis of his illness"⁹

In this paper, I intend to demonstrate that Polanyi's insights into features of personal knowledge and its formation can help us better understand the nature of practical reasoning. I will do so in two steps, the first of which is to recount Polanyi's description of tacit knowing and its formation. Then, I will test these insights by suggesting what they mean for understanding practical reasoning and its formation, in part by reflecting on using case studies to teach ethics.

The Nature and Development of Tacit Knowing

The first feature of tacit knowing is that it is, according to Polanyi, a matter of appraisal or perception; one might also call it a matter of discernment. In tacit knowing, the perceiver actively and passionately integrates clues from the environment in order to discover a meaningful whole. Polanyi often explains this way of knowing by means of everyday, non-controversial examples, such

as that of viewing stereoscopic pictures. In viewing such pictures, we simultaneously look at two photographs of the same scene taken from two points only a few inches apart. The result is that we perceive the scene in a richer way than if we view only one of the photographs. We achieve this richer perspective by treating the disparities between the two perspectives as clues that we then integrate into a larger whole (*KB*, 211–212).

A second feature of tacit knowing is its from-to structure. According to Polanyi, we attend from one or more things that remain outside of our focal awareness to the something else whose meaning we are trying to discern. To continue with the example of viewing stereoscopic pictures, we attend *from* our visually related neuro-physiological processes, as well as the two separate pictures and associated machinery *to* the scene contained in the pictures. We focus our awareness on the stereo-image but are only subsidiarily aware of the two separate pictures. This structure becomes most transparent in those times when we are forced to shift our attention to that with which are attending to the “something else.” As Polanyi notes frequently, “Repeat a word several times, attending carefully to the motion of your tongue and lips, and to the sound you make, and soon the word will sound hollow and eventually lose its meaning. By concentrating attention on his fingers, a pianist can temporarily paralyze his movement” (*TD*, 18). In short, all the physiological mechanisms, material props, and conceptual apparatuses serve as tools for finding the meaning of the separate pictures, a meaning that emerges from the process (*KB*, 212).

This notion of tools points to the process of indwelling, the third feature of tacit knowing, one implied by the “from” side of the “from-to” structure of tacit knowing. Polanyi perhaps best defines what he means by indwelling when he says, “We may be said to *interiorize these things or to pour ourselves into them*” (*KB*, 183, emphasis his). To what things does he refer? He refers to those things upon which we rely for the sake of learning about/discovering something else. On Polanyi’s account our knowing relies on our indwelling of many things: our body, tools that

extend our bodies (whether they are simple tools like a stick used to probe a hole or complex telescopes used to scan the skies), language, and culture—even moral teachings (*KB* 134, 148–149, and 183).¹⁰ Moreover, if we are to make sense of the actions of other people, Polanyi says that we must enter into their situation and see things from their point of view (*M*, 44). Tacit knowing therefore also seems to require the capacity of empathy.

A fourth feature of tacit knowing is that the process of integration, of sense-making, is a fluid process, one not governed by rules.¹¹ One of Polanyi's favorite illustrations of this feature of tacit knowing is that of wearing inverting spectacles, glasses that make one perceive the world upside-down. One eventually learns to compensate for the topsy-turvy visual cues and to negotiate the world again, but one does not learn to do this by following explicit rules such as, "remember that what you perceive to be below you is actually above you." In this situation, Polanyi finds such rules useless on two counts:

First, they do not tell us that we have to re-integrate our senses, on the contrary they confirm their normal integration and hinder their re-integration; second, even if some rule did tell us what we have to do, this would be useless, since we cannot directly control the integration of our senses. (*KB*, 199)

Instead, what happens is that, with time and effort, the person develops a new integration of visual clues, muscular cues, and a sense of balance in which the normal terms of right-side up or upside down no longer make sense (*KB*, 198–199). More generally, Polanyi explains the inability of setting forth rules to guide the process as self-defeating because we would end up with an infinite regress of rules for applying other rules (*M*, 61).

Presupposed by Polanyi's account of tacit knowing is the existence of a reality, even if our knowledge of that reality is only partial and subject to revision. As he says, "From the very start, the inquiry assumes, and must assume, that there is something there to be discovered" (*KB*, 172). Polanyi's notion of what is real

is anything but straightforward, however. He suggests that reality is marked by “an unlimited range of unsuspected implications” (*KB*, 172), which means that what is real promises to disclose itself in ever new and unpredicted ways. Thus he argues that “minds and problems possess a deeper reality than cobblestones, although cobblestones are admittedly more real in the sense of *tangible*” (*TD*, 32–33, emphasis his).¹² Because reality cannot be fully known, we cannot claim that our knowledge is universal in the sense of something true for all places and times. That does not mean, however, that our knowledge is mere whim or preference. According to Polanyi to claim something is true is to do so with universal intent. By doing so, we both commit ourselves to its truth and to the expectation that others ought to adhere to it as well (see *TD*, 78 and *M*, 194–5).

In sum, for Polanyi, all human knowledge grows out of the knower’s active and passionate integration of clues into a meaningful whole by means of indwelling a variety of tools. This task cannot be accomplished by woodenly following a formula or recipe. Nevertheless, the result should not be seen as mere whim or preference because it is both responsive to a reality that defies easy categorization and it is articulated with universal intent.

If all human knowing shares in the structure and dynamics of tacit knowing, the question naturally arises as to how these skills are developed. Polanyi’s answer is deceptively simple to understand, although difficult to practice. For Polanyi, such skills are learned under the tutelage of a master in a convivial community of explorers who are committed to a tradition of liberty that fosters a “dynamic orthodoxy.” This answer suggests two dimensions of skill acquisition, the first of which is the relationship of student/apprentice to a teacher or master.

The student first learns by observing the work of the master, trying to indwell not only the patterns of action but also the “spirit” of the master, thereby developing “a feel of the master’s skill” (*TD*, 29–30). Polanyi uses the evocative phrase “thrusting forward our imagination” to describe this indwelling, which amounts to developing a deep empathy with and for the master

(*KB*, 200). By entering imaginatively into the work of the teacher, the student “picks up the rules of the art, including those which are not explicitly known to the master himself” (*PK*, 53). The student also learns to make connections between textbooks and life by analyzing cases. Again making the analogy between personal knowing and medical training, Polanyi argues that medical students must learn to recognize symptoms in actual patients, not books, and that this comes by “repeatedly being given cases . . . in which the symptom is authoritatively known to be present, side by side with cases in which it is authoritatively known to be absent, until he has fully realized the difference between them and can demonstrate his knowledge to the satisfaction of an expert” (*PK*, 54–55). Such learning, like adjusting to inverting spectacles, will likely be protracted and strenuous (*KB*, 199).

Such learning obviously demands much from the student, not least of which is that of the student’s “intelligent cooperation” (*TD*, 5). The student must therefore submit to the authority of the teacher, trusting that “a teaching which appears meaningless to start with has in fact a meaning which can be discovered by hitting on the same kind of indwelling as the teacher is practicing” (*TD*, 61; cf. *PK*, 53). What keeps that submission to authority from becoming dangerous lies in part with the nature of the community to which student and teacher belong, a topic that takes us to the second dimension in which skill in tacit knowing is developed, i.e., the communal.

For Polanyi, the scientific community serves as a paradigm of the virtuous community in which this skillful knowing is developed.¹³ This community exhibits several commitments, the first of which is to scientific method as a way of knowing reality. Moreover, the community is committed to preserving the liberty necessary for scientists to coordinate their work spontaneously. To be committed to liberty does not, however, mean that there are no authority structures. Scientists share commitments to standards of plausibility, scientific value, and originality, standards that are employed in decisions about appointments to position, publication, and awarding of grants. Perhaps most striking about

this community is the dynamic orthodoxy it fosters, one that grants the liberty to oppose prevailing ideas in the name of truth. Polanyi therefore notes that “the authority of scientific standards is thus exercised for the very purpose of providing those guided by it with independent grounds for opposing it” (*KB*, 55). The initial submission to authority is thus for the sake of becoming skillful enough later to oppose that authority on its own grounds when the need arises.

Implications for Understanding Practical Reasoning

Practical reasoning, as we saw earlier, is the form of reasoning Aristotle thought was appropriate to use when one thinks about what to do. Up to this point, I have suggested that Polanyi might be able to enrich our understanding of practical reasoning, and I have summarized salient features of his description of personal or tacit knowing. Now it is time to articulate the view of practical reasoning that emerges when informed by a Polanyian perspective.

First, a Polanyian account would stress that practical reasoning is a matter of perception in which one imaginatively integrates clues from the environment for the sake of arriving at a response fitting or appropriate to the situation. A person who is skilled in practical reasoning would therefore be someone who exhibits facility in making perceptive judgments about situations so as to discern courses of action that promise to open up richer possibilities for living than other options.

Doing so requires that the agent attend from or indwell several things. The agent needs to indwell her own moral convictions, shaped as they are by her experiences and personal history. Moreover, the agent needs to indwell her own emotional constitution. In addition, the agent needs to indwell the features of the situation that define the limits and possibilities of a course of action. At the same time that the agent subsidiarily reasons from these things, she must also attend to that elusive course of action that would be appropriate under the circumstances.

Finally, the agent will be committed to the reality of moral truth. Polanyi’s perspective suggests that moral truths, despite

their intangible character, may be one of the richest realities, to the extent that they promise to reveal themselves over time in surprising and unexpected ways. Polanyi's perspective also suggests that whatever course of action one perceives as appropriate must be one that can be advocated with universal intent.

From a Polanyian perspective, facility in practical reasoning will be developed in an apprentice-like relationship with someone who is a skilled practical reasoner. In that relationship, the student will at first seek to imitate the teacher's reasoning so as, later, to surpass the teacher's skill. One of the chief means by which such reasoning can be taught is by means of case studies.

At this point it is appropriate to turn to a consideration of case studies, both to make this discussion more concrete and to analyze the method in light of these Polanyian observations. Advocates give many reasons for why case studies can be one particularly useful way to teach ethics. One is that case studies promote active learning on the part of students, in part because the narratives can make abstract ideas come alive. Put differently, cases can be emotionally engaging in ways that reading and discussion of theory are not. Moreover, the dialogical character of case narratives can foster interpersonal relationships among students, as well as between students and teachers, for case discussion can create a community in which all participants are learners.¹⁴ Another oft-cited advantage of case studies is their flexibility. Case studies can serve to attain any number of objectives (to teach method, to test theory, to analyze problems, or to form critical consciousness), as well as be taught in a variety of formats, such as role playing or debate (Stivers, et al, 10). Finally, case studies allow students to gain experience obliquely by their learning from and identifying with the characters in a case narrative (Stivers, et al, 290).

Case studies do not serve as a magic pedagogical bullet, however. A key factor in successful case discussions is the willingness of readers to wrestle honestly with issues raised by the case and to treat various perspectives with an open mind (Stivers, et al, 293, 296). Moreover, the effectiveness of case studies is

quite difficult to measure. Take for example, one particular form of case study used by many medical schools, problem-based learning. Some studies indicate that problem-based learning is no more effective in training medical students to diagnose conditions accurately than other pedagogies. The most significant factor in achieving diagnostic accuracy was the number of years of training.¹⁵ Experience, compared to pedagogy, therefore seems to be more successful in developing clinical judgment. To the extent that moral judgment mirrors clinical judgment, then one should not expect the mere utilization of case studies to be more effective in the development of moral judgment than it appears to have been in the development of clinical judgment. Still others worry that excessive reliance on cases distorts our understanding of the moral life. Stanley Hauerwas notes that several aspects of moral experience become hidden or neglected when ethics is treated as a matter of making the kinds of difficult decisions around which cases are usually built. Most seriously, this “standard account” of ethics assumes that the character of the agent is superfluous to the decision. As he puts it,

the standard account simply ignores the fact that most of the convictions that charge us morally are like the air we breath—we never notice them . . . because they form us not to describe the world in certain ways and not to make certain matters subject to decision. Thus we assume that it is wrong to kill children without good reason . . . *These are not matters that we need to articulate or decide about; their force lies rather in their not being subject to decision.*¹⁶

Personal experience in teaching case studies bears out both the promise and difficulty of this pedagogy. I have, off and on over a period of years, experimented with case studies in ethics classes. I have most often used them as ways to get students to apply theory and then reflect critically on where that application of theory has taken them in light of their own religious and/or moral convictions. Thus we spend class time discussing a particular

approach to Christian ethics, such as the feminist approach, and then at the end of that unit discuss a case in which the insights gleaned from the theory are used to provide advice to the central character(s) in the case. Students, sometimes singly and sometimes in groups, lead the case discussion following instructions I provide. Generally, I first ask students to identify (1) the relevant actors in the case, (2) the goods at stake for those actors, (3) a range of live options for action, and (4) the likely consequences, both good and bad, for each of those options. Then I have students put themselves in the role of our theorist-author and advise the actor from the author's perspective. Finally, I ask students to reflect on how their personal advice would differ from that of the author's.

In monitoring discussions and grading case analyses, I have found that students do indeed find the cases more engaging than the standard fair. In addition, I have discovered, not surprisingly, that students exhibit varying levels of sophistication in their ability to connect theory with case and to reflect critically in light of one's own convictions. However, other parts of my experience have left me ambivalent about using cases. For one thing, I have often been surprised at the difficulty that many students have in articulating their moral convictions. Moreover, I have been disappointed by the difficulty that many students have in digging very deeply into the cases, in entering into them imaginatively, whether to identify goods at stake, options for actions, or even potential good and bad consequences for a particular course of action. I have also been frustrated by a very real hesitancy among students to offer advice to the main character in the case or to engage critically the advice offered by other students in the class. The dominant reason students have given to explain this hesitancy is that "everyone has to make his or her own decision" or "it depends on what she wants to do." These comments seem to reflect a tacit awareness of the personal character of a moral decision, but are distorted by our culture's emotivism, that is itself fueled, I suspect, by the inherent sloppiness of the process (i.e., the relative uselessness of following rules in such a way that

everyone will arrive at the same “moral” answer). A final observation is that I have not witnessed much, if any, increase in abilities to perform these tasks over the course of the semester.

Understanding practical reasoning as personal knowing can help explain these difficulties and suggest modifications to the use of case studies. Here I focus on two of the difficulties mentioned above. Take, for example, the difficulty that students have in articulating their moral convictions. From a Polanyian perspective, this problem should come as no surprise because I am asking students to make articulate or explicit what they are indwelling tacitly. As Polanyi is fond of pointing out, the process of knowing is disrupted when one is forced to focus attention on that from which one is doing the knowing. This would seem to be just as true for moral reflection as it is for pianists or bicyclists who, when asked to explain what they are doing, find their performances interrupted. That difficulty in articulating the inarticulate, as well as the disruptive nature of doing so, may well reinforce the tendency to retreat into emotivism. Nevertheless, it needs to happen and ways need to be found to encourage such reflection despite the awkwardness of the process.

Polanyian insights can also help explain the seeming lack of progress in practical reasoning over the course of a semester. If Polanyi is correct that the student learns in close relationship with a mentor, then the relationship between the two must be much closer than is often the case in a class of even modest size, say 15–18. The formation of a moral self (where ability to reason practically is the main measure of moral achievement) might best be achieved as an independent study in which student and professor work through cases in a collaborative way—the professor offering his or her insights, with the student asking probing questions and making challenging comments along the way.¹⁷ Moreover, if the dominant objective of a class is to develop moral perceptivity, it will be important to give students repeated hands-on experience with cases, not simply one case for a grade combined with hopefully vicarious engagement with the presentations by other students.

Conclusion

Michael Polanyi's work has most often been appropriated by philosophers interested in his epistemology and theologians interested in the religious implications of that epistemology and/or what little he says about God and religion. The ethical promise of his work remains largely untapped, despite the fact that his project was largely motivated by an analysis of the morally corrupting nature of modern thought. Polanyi could be seen as a resource for addressing the moral equivalent of the subjective/objective split in modern epistemologies, i.e., the divide between what I have called moral dogmatists and emotivists. Moreover, if the process of moral knowing that we have associated with practical reason must be treated as a form of personal knowing, then there is room for appropriation there.

This last point has provided the point of departure for this exploratory attempt to unpack the moral implications of one aspect of Polanyi's work. The traditional terms used for moral knowing are "practical reasoning" and "prudence." In the Classical thinking of Aristotle and Thomas, practical reasoning is the virtue or skill that unites moral and intellectual dimensions of existence because it involves reasoning soundly about how to attain the good in light of passions that are correctly ordered toward that which is truly good. Contemporary authors Jonsen and Toulmin treat clinical judgment in medicine as a paradigm example of practical reasoning, which offers a direct link to Polanyi in that he uses clinical medicine as a model for personal reasoning.

In treating practical reasoning as a form of personal or tacit knowing, we have seen that practical reasoning must be rooted in a conviction that there is a moral reality—a good that is not merely subjective preference yet never fully captured in articulate thought, a reality that promises to disclose itself in the future in unexpected ways. The agent, on the basis of that conviction, reasons with universal intent by indwelling his body, emotions, and moral convictions, all of which are shaped by his personal

history. In addition, one must passionately and imaginatively probe the details of the situation—indwell them empathetically—in search of clues to the moral reality that can be integrated so as to inform an action congruent with moral reality, i.e., an action that promises to open up largely unforeseeable possibilities for living in the particular, concrete confines of this situation.

From a Polanyian perspective, one would expect that the best way to develop these skills in personal practical reasoning is by means of practice with case studies under the tutelage of those skilled in practical reasoning (or at least more skilled than the student). Such tutelage will require motivated students who will have to overcome gradually the emotivism that many bring with them. It will require intensive effort in working with individual students or small groups of students on a case, for students need to be prodded to articulate their convictions and to indwell the particulars of a case. Developing personal practical knowing will also require engagement with a significant number of cases over the course of a semester if students are to improve in their abilities to discern and to act.

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NOTES

1. The most sustained investigation of Polanyian ethics can be found in the Polanyi Society journal, *Tradition & Discovery* 29, no. 1 (2002–3), the entirety of which is devoted to bringing Polanyian insights to bear on ethics. Some other articles that relate Polanyi's thinking to ethics are: Walter E. Conn, "Michael Polanyi: The Responsible Person," *The Heythrop Journal* 17, no. 1 (1976): 31–49; Walter Gulick, "Virtues, Ideals, and the Convivial Community: Further Steps Toward a Polanyian Ethics," *Tradition & Discovery* 30, no. 3 (2003–4): 40–51; Terence Kennedy, "Epistemology and the Human Sciences: Michael Polanyi's Contribution to the Reshaping of Moral Theology,"

Tradition & Discovery 20, no. 2 (1993-1994): 11–16; Paul Nagy, “Philosophy in a Different Voice: Michael Polanyi on Liberty and Liberalism,” *Tradition & Discovery* 22, no. 3 (1995–6): 17–27; Harry Prosch, “Polanyi’s Ethics,” *Ethics* 82 (January 1972): 91–113; and John Rothfork, “Postmodern Ethics: Richard Rorty and Michael Polanyi,” *Southern Humanities Review* 29 (Winter 1995): 15–48. Stefania Jha devotes a chapter to the topic in her *Reconsidering Michael Polanyi’s Philosophy* (Pittsburgh: University of Pittsburgh Press, 2002). While I do not claim that this list of works relating Polanyi to ethics is exhaustive, the contrast with the number of philosophically or theologically-oriented articles remains striking.

2. Diane Yeager provides a succinct account of moral inversion in “Confronting the Minotaur: Moral Inversion and Polanyi’s Moral Philosophy,” *Tradition & Discovery* 29, no. 1 (2002–3): 23. See also her discussion of Polanyi’s ongoing use of the concept in note 1, p. 47.

3. I will use the terms personal and tacit interchangeably. In his later writings, Polanyi seems to prefer to talk about tacit rather than personal knowledge as he comes to emphasize more the process of knowing rather than the status of the knowledge produced. On Polanyi’s indebtedness to Gestalt psychology, one of many places where he acknowledges its value can be found in *Personal Knowledge* (Chicago: University of Chicago Press, 1962), 55–58 (hereafter abbreviated *PK*, with page numbers cited in the text).

4. Alasdair MacIntyre provides a persuasive account of how emotivism becomes the dominant ideology of capitalist societies in his *After Virtue*, 2nd ed. (Notre Dame: University of Notre Dame Press, 1984), 23–35.

5. See Michael Polanyi and Harry Prosch, *Meaning* (Chicago: University of Chicago Press, 1975), 64–65 (hereafter abbreviated as *M*, with page numbers cited in the text).

6. Mark Discher comes closest in his “Michael Polanyi’s Epistemology of Science and Its Implications for a Problem in Moral Philosophy,” *Tradition & Discovery* 29, no. 1 (2002–3): 49–59.

7. This account of the classical view of practical reasoning draws from Aristotle, *Nicomachean Ethics*, trans., Martin Ostwald, Library of Liberal Arts (New York: Macmillan Publishing Co., 1986), 158–173 and Thomas Aquinas, excerpts from the *Summa Theologica* I–II, Q. 61, aa. 1–2 and Q. 94, a. 4, in *Introduction to St. Thomas Aquinas*, ed., Anton C. Pegis (New York: Modern Library, 1948), 586–589 and 640–642. It should be noted that the details of how practical reasoning and moral virtue relate remain a matter of debate among interpreters of both Aristotle and Thomas.

8. Jonsen and Toulmin take inspiration from their experiences on a federal bioethics commission charged with setting guidelines for research with vulnerable populations. They note that commission members came from different ethnic, disciplinary, and religious backgrounds, and, therefore, did not share many substantive moral convictions. Nevertheless—and surprisingly—the commission’s work was not paralyzed by interminable and unresolvable debate between competing factions. Instead, commissioners found that as long as the discussions remained at the level of practical conclusions, they were able to agree quite easily. It was only when they gave reasons for their conclusions that they found that they could not agree with one another. See Albert R. Jonsen and Stephen Toulmin, *The Abuse of Casuistry: A History of Moral Reasoning* (Berkeley: University of California Press, 1988), 16–18. Hereafter, this work will be abbreviated AC, with page numbers cited in the text.

9. Michael Polanyi, *Knowing and Being: Essays by Michael Polanyi*, ed. Marjorie Grene (Chicago: University of Chicago Press, 1969), 125. Hereafter, this work will be abbreviated KB with page numbers cited in the text.

10. See also Michael Polanyi, *The Tacit Dimension* (Gloucester, MA: Peter Smith, 1983), 12–18. Subsequent references to this work will be given in the text, abbreviated as TD.

11. To say this does not mean that Polanyi has no place for rules in the process of knowing, but he is clear that such rules come after the fact and serve more as rules of thumb, approximate

articulations of what cannot be made totally explicit (see *PK*, 162 and 200).

12. The complexity of Polanyi's view of reality can also be seen in his account of the multileveled nature of reality, wherein principles pertaining to the lower levels of reality provide boundary conditions for the principles characterizing the higher levels. See, e.g., *The Tacit Dimension*, 35–46.

13. The following description of the scientific community draws from *Knowing and Being*, 49–72. Polanyi discusses these matters throughout his writings, perhaps in the greatest detail in *The Logic of Liberty* (Indianapolis: Liberty Fund, 1951) and *Science, Faith, and Society* (Chicago: University of Chicago Press, 1964).

14. See Robert L. Stivers, Christine E. Gudorf, Alice Frazer Evans, and Robert A. Evans, *Christian Ethics: A Case Method Approach*, 2nd ed. (Maryknoll, NY: Orbis Books, 1994), 289. Subsequent references will be given in the text as Stivers, et al.

15. Sebastian R. Alston, "Does PBR Still Work?" presented at a workshop at Mercer University, Macon, GA, March 2003, slide 3, page 3. The study compared three medical schools in Holland.

16. Stanley Hauerwas, with Richard Bondi and David Burrell, *Truthfulness and Tragedy* (Notre Dame: University of Notre Dame Press, 1977), 18–21, emphasis added. Note the Polanyian tone of Hauerwas's remarks: his view of the tacit nature of our moral convictions suggests that we indwell them and use them subsidiarily in order to respond to situations that require action.

17. Of course, this is not to say that moral instruction could not occur with more than one student at a time, but it would still require working with small groups.