Michael Polanyi's Epistemology Of Science And Its Implications For A Problem In Moral Philosophy

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ABSTRACT Key Words: generalism, particularism, moral epistemology, comprehensive entities
Ethical particularists allege that there are, on account of epistemological limitations, no such things as general moral principles. This paper defends the existence of general moral principles by adapting and appropriating Polanyi's epistemology of science to this problem in moral philosophy.

The received view of moral theory is that morality has something of the universal about it. Given that philosophers from Plato onward have almost uniformly affirmed the permanence and universality of important truth, moral philosophers have, with few exceptions, until fairly recently, held that whatever truth there might be in ethics must be permanent and universal.[1] Because philosophy, by and large, is a quest for the universal, moral philosophers have typically tried to determine and codify what is universal concerning morality.

Since Kant, the universal in moral philosophy has largely been construed in a "top-down" fashion. The fundamental idea is that there are principles which hold generally for all situations which have the same morally relevant features. On this view, the task of the moral agent is to correctly identify which principle is applicable to a specific situation and allow it to stipulate the course of action to be taken in that situation. If the correct principle is selected and applied, then *ipso facto* the correct action will have been taken by the agent. On this conception of moral theory a principle is *general* if it can be said to apply to another situation which has the same moral features, and it is *universal* in that it will apply to all such similar situations. The view that there are such general and universal principles has come to be known as generalism. Generalists typically argue that moral principles are necessary for one or more of the following: for helping us to see what action is called for in a given case; for justifying our moral judgements; for explaining our moral judgements, and for assisting us in providing moral instruction, especially to the young.

What and Why Particularism?

This received top-down understanding of moral theory has come under fire in the last twenty-five years or so. What might be called "bottom-up" theorists have criticized generalism on a number of fronts. First, it is thought that the top-down method lays too much emphasis upon the identification of codifiable rules to the detriment of a lived, vibrant moral life. In other words, top-down strategies result in the over-intellectualization of what is involved in being a moral agent in the world. Such a dry, emotionless, exacting approach to ethical decision-making is thought to distort what is actually true about our moral experience.[2] Human beings are not like machines which function algorithmically in a straightforward and inflexible manner. Rather, the moral life involves the agent in a web of considerations which are not capable of being codified into a simple rule or principle. Bottom-up theorists contend that the attempt to reduce moral phenomena to such rules would be to suck the life out of a genuine moral experience of the world. On the bottom-up view, a fully human account of the moral life will not be stifled by principles which preclude creative interaction with the specific circumstances at hand. It will, instead, be vital and attuned to the particular features of the case in question. This bottom-up approach has come to be known as particularism.

Another major worry bottom-up theorists, or particularists, seem to have with respect to generalism is that it does not take adequate account of the complexity of the moral life. The worry here is that principles function like the bed of Procrustes, making moral experience of the world fit them rather than the other way round. As might be expected, the bottom-up theorist alleges that this has resulted in many erroneous moral judgments. Jonathan Dancy, one of the leading representatives of particularism, writes:

> Particularism claims that generalism is the cause of many bad moral decisions, made in the ill-judged and unnecessary attempt to fit what we are to say here to what we have said on another occasion. We all know the sort of person who refuses to make the decision here that the facts are obviously calling for, because he cannot see how to make that decision consistent with one he made on a quite different occasion. We also know the person (often the same person) who insists on a patently unjust decision here because of having made a similar decision in a different case. It is this sort of *looking away* that particularists see as the danger in generalism. Reasons function in new ways on new occasions, and if we don't recognize this fact and adapt our practice to it, we will make bad decisions. Generalism encourages a tendency not to look hard enough at the details of the case before one, quite apart from any over-simplistic tendency to rely on a few rules of dubious provenance....[3]

Particularists are concerned that principles do more to mislead than to assist in making good moral judgments about a given case. In order to make good judgements about a given case the particular features of that case must be allowed to determine the judgement rendered by the agent without recourse to principles. Principles will either miss or obscure the unique features of the case at hand, and that will result in bad judgements made on the part of the agent.

This worry that principles are to blame for much error in moral decision-making is closely related to the frequently aired particularist concern about the *complexity* of the moral life. There is a worry, as stated in the quotation from Dancy above, that principles engender an "over-simplistic tendency to rely on a few rules." Rules, or principles, it is thought, are inherently incapable of accounting for the virtually limitless complexities of a specific case. Dancy, for example, approvingly quotes George Eliot, whom he affectionately dubs the "Patron Saint of Particularists," as saying:

> All people of broad, strong sense have an instinctive repugnance to the men of maxims; because such people early discern that the mysterious complexity of our moral life is not to be embraced by maxims, and that to lace ourselves up in formulas of that sort is to repress all the divine promptings and inspirations that spring from growing insight and sympathy.[4]

Particularists worry that adverting to ready-made principles will frustrate the production of the necessary moral insight and creativity which is called for in the case before us.

What makes the moral life so complex? Part of the plexiformity which particularists contend is part and parcel of the moral life is due to the nature of moral properties themselves. Particularists reject the alleged generalist practice of insisting that if a property makes a difference of a certain kind here, it must do so everywhere. They prefer, instead, to allow that reasons are *holistic*; moral properties can switch polarity and as a result function very differently in different contexts. For example, my doing something which causes you pain might be thought, in many circumstances, to be a reason against the performance of the action. But there

may be circumstances, such as when you need your dislocated shoulder re-set, when my causing you pain is not a reason against the performance of the action. Furthermore, there may even be circumstances when causing someone pain is not only not a reason against the performance of an action, but is actually a reason in *favor* of performing it, such as in disciplining a child. In short, the moral life is not simple and straightforward; it does not easily lend itself to general principles such as "It is wrong to cause someone pain." Dancy writes:

> The only objection we make directly to the possibility of general moral principles was based on the holism of reasons.... But this is just a sharper way of making the familiar point that given the complexity of moral life it is going to be impossible to codify any moral maxim in a way that will render it invulnerable to the vagaries of future situations.[5]

From the particularist's point of view, then, the top-down construal of moral decision-making is inadequate. Particularism supposes that the complexity of the moral life as encountered in concrete situations is not reducible to principles which are generalizable. Moreover, when such attempts at generalization are carried out, they very often result in agents making bad moral decisions.

Finally, particularists, making use of Wittgenstein's insights in the *Philosophical Investigations*, object to generalism on the grounds that the generalist's propensity for following rules is, in the end, ultimately rendered otiose.[6] For, if it is a rule, call it rule1, which is to determine what I should do in this case, then it would seem that I require another rule, rule2, in order to guide me in the application of rule1, and then a further rule, rule3, in order to guide me in the application of rule2, which will guide the application of rule1, and so on *ad infinitum*. One can posit rules for following rules iteratively, and there appears to be no way out of the regress. Rule following, *a la* the generalist, is, according to the particularist, indeterminate and, consequently, ultimately unhelpful. On account of these concerns, the bottom-up methodology of the particularist has been suggested as a corrective replacement for the historic top-down method of the generalist.

In what follows I would like to try to show that the thought of Michael Polanyi may help to shed some light on what is at stake in this debate between particularists and generalists and try to offer a sketch of how Polanyi's thought might provide the theoretical framework for a rapprochement.

Polanyian Perspectives on Particularist Objections

Objection 1—The Unspecifiability of Principles

It is important to note that the generalist tendency to employ rules or principles algorithmically seems to be a characteristic of the modern mind, a characteristic of modern culture which Polanyi stridently opposed. The generalist, it seems, wants to keep all knowledge of particulars in front of himself focally all at once in the form of an explicit principle; he wants the right-making or wrong-making features of any particular case to be formally spelled out by way of a general principle upon which he can focus in an attempt to garner guidance concerning the case at hand. Here, I am suggesting, is what Polanyi might contend is an error on the part of the generalist: he wants to keep the grounds for his judgement about the particular case clearly in his focal awareness; he wants all the features of the case to be clearly specified in a formal principle. But discovery, if Polanyi is correct, does not happen this way. According to Polanyi, when the scientist's imagination is "sallying forth" in an attempt to find the solution to a problem she has set for herself, she is relying upon a vast domain of unspecified knowledge, knowledge of which she can have only a subsidiary awareness. Indeed, according to Polanyi, it would be impossible for her to explore the problem at hand focally if she were not at the same time

relying upon, and making use of, a whole range of subsidiary knowledge about which she is confident and upon which she can draw, but without having to focus upon it directly. The generalist, however, seems reluctant to permit knowledge to function subsidiarily in this way. Refusal to admit of this subsidiary knowledge, however, is, according to Polanyi, a characteristic error of the modern mind. He writes, "The modern mind refuses to accept the necessity for tacit assumptions and *wants to keep the grounds of its beliefs clearly in focus*, as one does in an explicit deduction. Our whole culture is pervaded by the resolve to avoid unspecifiable commitments."[7] The Polanyian corrective for generalists, if my account is correct, is to acknowledge at least some reliance upon unspecified subsidiary knowledge in our discovering the correct judgment to make concerning a particular moral case.

To put a finer point on the matter, the generalist's inclination to draw explicit inferences about what to do in individual cases by subsuming them under general principles is doomed to failure on account of the unspecifiability of principles. Jonathan Dancy has pointed out that particular cases cannot be subsumed under general principles for epistemological reasons. If one has, as is plausible on a generalist scheme, a conflict between principles—such as when, for example, my neighbor asks me how I like her hideous new hat, and my principles "Never tell a lie" and "Never be rude" come into conflict[8]—how is one to resolve the matter by recourse to principle? I can either avoid lying by being rude, or avoid being rude by lying, but not both. The generalist might respond here that principles can be lengthened in order to account for the case which, initially, seems awkward or recalcitrant. Considered judgments concerning lying and rudeness may prompt the generalist to adjust one of her purported principles to more closely approximate the true principle. So the revised principle may be something such as "Never tell a lie, unless it is a matter of trivial politeness" or "Always be polite, unless it would involve telling a lie." Dancy, however, preempts this generalist move. He writes, "[t]here are just too many defeaters for the absence of each one to count among our original reasons, and the general absence of a defeater is not to be thought of as one of the reasons why we judge the first action right."[9] In other words, Dancy is asserting that if there were no other moral considerations involved besides, say, truth-telling, we would not have been inclined to tell the truth while being explicitly aware of the moral rightness of doing so because it did not involve insulting someone, or jeopardizing national security, or putting someone's life in danger, etc. That is to say, we did not read through, in our minds, so to speak, a long principle which took into account all of the possible defeaters, determine that none of them were present, and then proceed with telling the truth. Dancy's conclusion, then, is that we could not have access to knowledge of all of the possible defeaters prior to encountering specific cases wherein they are actually present; and because we do not have recourse to such long, and perhaps disjunctive, principles, we are not, then, appropriating these principles as generalities under which we have subsumed individual cases. In short, we cannot subsume individual cases under general principles because such principles cannot be specified *a priori*.

Now, I think Polanyi would agree that particularism is correct in maintaining that principles cannot be *explicitly* known and specified in this way in advance. Dancy's objection to generalism succeeds because he is assuming that generalism entails that generalizations in the form of principles be *explicitly* known by the agent in order to serve their alleged function. But, from a Polanyian point of view, imaginative moral agents might well be capable of anticipating *tacitly* or intuitively what moral properties, including defeaters, might be relevant. In his essay "Genius in Science" Polanyi heralds C.F.A. Pantin as offering "a brilliant description of anticipation." He quotes Pantin as follows: "[Intuition] does not only suddenly present solutions to our conscious mind, it also includes the uncanny power that somehow we know that a particular set of phenomena or a particular set of notions are [sic] highly significant: and we are aware of that long before we can say what that significance is."[10] To apply this idea to the present matter, we might parody Pantin as follows: "[Intuition]

does not suddenly present solutions to our conscious mind, it also includes the uncanny power that somehow we know that a particular defeater or set of defeaters has no bearing on the case at hand: and we are aware of that long before we can specify what precisely those defeaters are." It is subsidiary knowledge, not explicit knowledge, which is required by an agent in order to correctly subsume a particular case under the appropriate generality. The subsumption of particulars under generalities cannot be explicitly specified, because it requires intuition and reliance upon the tacit dimension. Hence, Polanyi's thought may help to make consistent and intelligible the intuitions of both generalists and particularists regarding this objection to generalism.

Objection 2—The Unformalizability of Following a Rule

This introduces a second reason why particularists deny that individual cases can be subsumed under general principles. The issue here goes back to Wittgenstein on following a rule. If, according to generalists, an agent will receive direction on how to judge a particular case by virtue of subsuming it under a general principle, then it must be clear to the agent that this particular case is an instance of "going on in the same way" indicated by the alleged general principle of which the case in question is presumed to be an instance. In other words, we can group this case before us together with similar cases in the past, and how we judged the past cases will help determine how we should judge in the present instance. In this way the generalist holds that we can "go on in the same way" applying a general rule to specific cases.

However, as Wittgenstein has shown us, it is not possible to formalize what it means to "go on in the same way." If we ask an agent to follow the rule, "add two," and she counts by adding two, we have no way to show her that she is not following the rule if she reaches, say, one thousand and begins to count, 1004, 1008, 1012, etc., all the while insisting that she is continuing to follow the rule, "add two." The lesson here seems to be that, although she may have perfect grasp of the rule, "add two," she may not have the conceptual competence to apply the rule correctly. Rules do not act as "rails" which keep us engaged with reality. Grasping a rule, in other words, will not guarantee a given agent's ability to apply a concept competently. Particularists seem to want to employ this as a defeater for the notion that general principles are truth-makers with respect to the truth of given moral instances. If Wittgenstein is right, the notion of rules acting as rails is bankrupt, and so, consequently, is the notion that rules are truth-makers.[11] It is only if we are confident that we are going on in the same way in our application of a general principle to specific cases that the idea of the principle *qua* truth-maker will be intelligible. So, how is it that an agent can have confidence that she is "going on in the same way"?

Once again, Polanyi's thought, by weaning the generalist from his positivist inclinations, might enable the generalist to respond to this particularist challenge. First, Polanyi is keenly aware that rules require interpretation (and sometimes reinterpretation) and that the interpretation of a rule cannot be made on the basis of another rule, on pain of regress. He writes, "How can we ever interpret a rule? By another rule? There can only be a finite number of tiers of rules so that such a regression would soon be exhausted."[12] In "Reconstruction" Polanyi contends that the application of rules requires subsidiary indwelling. He writes:

> [A]gain as we have seen, our rules for establishing true coherences. . . are and must remain indeterminate. Any rules we have must be applied, of course; and, to do this, we may have additional rules for their application. But we cannot go on having specific rules for the application of specific rules for the application of specific rules ad infinitum. At some point we must have "rules" of application (if we can call them that) which we cannot specify,

> because we must simply dwell in them in a subsidiary way. They are part of our deepest commitments. But for this reason they are not specifiable.[13]

According to Polanyi, an agent can have confidence that she is going on in the same way—but not because such a procedure can be formalized all the way down, so to speak. Rather, knowledge of how to go on in the same way in the application of rules entails a tacit coefficient. The knowledge of how to do this, although genuine, is subsidiary.

Objection 3—The Construction of Universal Terms When No Two Tokens of a Type Are Exactly Alike

On a generalist account, certain individual cases—although different in some respects, to be sure—are thought to be similar enough that they can be grouped together under a general classification. For example, if I kill an innocent person on Monday while wearing green shoes and kill another innocent person on Tuesday while wearing blue shoes, the generalist will likely want to say that both instances can be grouped together under the general heading 'murder', even though there are differences between the cases, *viz*., the day of the week on which the killings took place and the color shoes I was wearing while doing the killing. Generalism, that is to say, entails that moral agents be able to make taxonomic judgments; generalists want to say that cases in the past have had certain features which are similar to this case, and thus by taxonomically grouping this case together with those previous cases we can infer from what it was that we felt compelled to say about those cases concerning what it is that we should say here about this case now before us. Particularists, however, are prone to point out that any differences between cases cannot be judged ahead of time to be irrelevant. After all, if one tells a rich enough story, any feature of a case may be deemed morally relevant. No two cases are really alike. Hence, according to the particularist, the generalist is incapable of making legitimate taxonomic classifications.

Polanyi is aware of this sort of problem. In his essay, "Reconstruction," Polanyi notes how indeterminate all taxonomic classifications are. He writes, "Plato and his school were the first to be troubled by the fact that *in applying our conception of a class of things we keep identifying objects that are different from one another in every particular*."[14] Plato offers the classification of "man" as an example. If I may be permitted to use some terms anachronistically, if tokens of the type "man" can be distinguished from one another on the basis of particular features, how is it, Plato wants to know, that there can be an archetype for the kind "man"? The archetype cannot at the same time be young and old, as particular men are, or hirsute and bald, or fair and swarthy, etc. But neither can he have any one of these properties as opposed to its alternative; for then those "tokens" with the alternative property could not rightly be said to belong to the type "man." Plato's purported solution to the problem is to hold that the *eidon* of "man," the perfect man, has none of these particular properties. Particular properties are instantiated only in imperfect copies, but not in the archetype. Polanyi notes that this purported solution merely "embodies instead of eliminates the paradox of identifying different individuals." It does not really begin to solve the problem of how it is that we identify individuals as members of a class. Polanyi then further notes that this problem of taxonomic indeterminacy gets solved neither by nominalism (because the problem simply reasserts itself when we inquire as to why it is that we should apply the same label to a collection of different individuals), nor by the use of the notion of open-texturedness (because to have an open-textured term merely means that there are differences in the instances in which the term will apply. But still the term applies to some objects, and not others. How this is determined is still left open.)[15] So, taxonomic identification is difficult, indeed. For the particularist, this fact of taxonomic indeterminacy gives rise to the claim that there

are as many principles as there are cases. Each case has its distinctive, particular features and, thus, is unable to be subsumed under a generality. Any principle general enough to apply to another case, likewise, will fail to take account of the particular features of the individual case. Hence, particularists allege that talk of general principles is mistaken, at worst, or unhelpful, at best.

Polanyi's notion of tacit knowledge, however, may, again, shed light on how it is that we are able to make taxonomic classifications. With respect to Plato's problem about how to establish "man" as a type, Polanyi admits, "This indeterminacy is irreducible." He goes on, however, to claim, in spite of this irreducible indeterminacy, that "its comprehension is safely controlled by tacit integration. Tacit knowing commonly integrates particulars into their joint meaning."[16] Polanyi writes in *Personal Knowledge*:

> Yet it would seem impossible to devise a definition which would unambiguously specify the range over which human shape may, and beyond which it may not, vary; and it is certain that those who recognize this shape are not in possession of any such explicit definition. Instead, they have exercised their art of knowing by forming a conception of the human shape. They have trusted themselves to identify noticeably different instances of what—in spite of these differences—they judge to be the same features, and to discriminate in other cases between things which, in spite of some similarities, they judge to be instances of different features. Sustained by the belief that a human type exists, they have continued to build up their conception of it by noticing human beings as instances of this type. In doing this they have practised the kind of power used for generating a focal awareness of a comprehensive entity from a subsidiary awareness of its parts.[17]

If it is not already obvious, what I am suggesting is that Polanyi's remarks here concerning the taxonomic identification of the human species might equally apply to moral cases and moral principles. For the generalist who is willing to appropriate Polanyian categories, it is tacit knowledge gained through a subsidiary awareness of the previous functioning of properties as right-making and/or wrong-making that makes possible a judgement concerning how those properties are functioning in this present moral instance. By practicing this "power used for generating a focal awareness of a comprehensive entity from a subsidiary awareness of its parts," a moral agent might be able to develop a general principle, albeit one that is not completely specifiable, from his subsidiary awareness of how the relevant moral properties have functioned in previous specific instances in the past. As one makes taxonomic judgments about human beings "sustained by the belief that a human type exists," so one makes taxonomic judgments about moral instances sustained by the belief that a general moral principle exists. If I am correct in holding that moral principles are in some ways analogous to Polanyi's comprehensive entities,[18] then knowing how to make taxonomic classifications is an unformalizable act of personal knowledge.

So how does one build up an awareness of a comprehensive entity? According to Polanyi, it requires experience; knowledge of comprehensive entities is arrived at *a posteriori*. He insists upon "the fact that valid generalizations are commonly arrived at by empirical inquiries based on *informal* procedures."[19] Furthermore, technical, scientific comprehensive entities must be arrived at, according to Polanyi, not only through practical experience, but also through apprenticeship. In "The Scientific Revolution" Polanyi writes:

> This is why zoology and botany cannot be learned from printed pages, any more than medicine can. This is why so many practical hours of teaching in the laboratory has to be given also in many other branches of the natural sciences. Wherever this happens, there some knowledge

> of the comprehensive aspect of things is being transmitted, a knowledge of those things which we must acquire by becoming aware of a multitude of clues that cannot be exhaustively identified. We must learn the physiognomy of such things by relying on clues which cannot be exhaustively identified in themselves.[20]

What Polanyi says about mystery of discovery applies equally to the art of making taxonomic classifications: "[T]acit knowing is able to make good sense of an aspect of science that has flatly resisted all efforts to bring it into the ambience of strict formalization."[21] In short, the practice of making taxonomic classifications necessitates reliance upon a tacit coefficient.

One final point might be worth making with respect to how we come to understand universal terms. If my account is correct, it is hardly surprising that philosophers from Aristotle onward have emphasized the necessity of *practicing* the virtues which are learned through *imitation*. Space does not permit me to explore this connection in detail, but the nexus between particularism, virtue ethics and Polanyi, I believe, bears further investigation.

Unspecified and Unformalizable, but Still General

From what I have said so far it might appear that Polanyi's thought has done more to justify and enhance particularism and to critique generalism than the other way round. This is true up to now because I have used Polanyi's thought to challenge the notion, which seems to plague traditional generalists, that ethics is a formalizable enterprise, which it seems not to be. And if the impulse to formalize ethics stems from a desire to be more *exact* and more *scientific*, then, according to Polanyi, that motivation stems from a false and naive notion of what science is. According to Polanyi, science is inexact,[22] riddled with indeterminacy[23] and contains aspects which defy formalization. So, should a moral philosopher following Polanyi's thought adopt a full-blown particularism?

I do not think so. The reasons I believe particularism does not follow from Polanyi's thought are several. First, while I am unaware of any passage within the Polanyian corpus where he explicitly argues for the existence of general principles in science, he never denies their existence. Of course, an argument from silence may not seem a very powerful argument, but it is important to remember that Polanyi's whole project is an attempt to show that perfect codifiability and formalizability in science are impossible; it is a myth which he labors to debunk. His goal is to show that no rules or principles of science are fully determinate or infallible. But his very eagerness to show that they are neither fully determinate nor infallible does seem to entail that he thinks that there are general principles, albeit of this qualified sort. Polanyi, while acknowledging the existence and helpfulness of rules, is quick to point out that, "Verification, even though usually more subject to rules than discovery, rests ultimately on mental powers which go beyond the application of any definite rules." Polanyi's intent is to make it clear that he is not denying the existence of rules, but merely hoping to "put them in their place," so to speak: "Nor am I saying that there are not rules to guide verification, but only that there are none which can be relied on in the last resort."[24] In spite of the indeterminacy of scientific rules, however, they are still necessary: "No scientific discovery can be strictly verified, nor even proved to be probable. Yet, we bet our lives every day on the correctness of scientific generalisations, for example those underlying our medicine and technology."[25] So, for Polanyi, generalizations there are, though they are neither infallible, completely formalizable, nor fully specifiable.

Second, scientific discovery for Polanyi is motivated by the scientist's desire for a "deepening coherence" in his understanding and grasp of reality. Coherence seems to imply generalities which organize particular features of the world. When a scientist believes that he has found a solution to a problem he has set for himself, he "return[s] to the quiescent state of mind from which the enquiry started, but return[s] to it with a new vision of coherence and reality."[26] Much like the example of conflicting moral principles above, the scientist adjusts his view of reality in order to establish equilibrium. Kepler, for example, established the principles of planetary motion as a result of his determination to account for the discrepancy in the position of Mars. The resulting "laws" are generalizations which yield greater coherence and a tightening grip on our grasp of astronomical reality. Discovery yields generalizations.

Of course, just because Polanyi believes that generalities are possible in science does not entail that he necessarily would think they also exist in ethics. Margaret Little, for example, holds that moral particularism is much more viable than scientific particularism on account of the fact that contextualization in ethics is far more thoroughgoing than it is in science.[27] Little contends that there is no 'pure model' in ethics the way there is in physics. A pure model in scientific theory is one which it is believed actual situations can only approximate. Boyle's law, for example, is a pure model of how gasses behave, because Boyle's law does not specify how other factors, inevitably present in any actual situation, will effect gasses. It applies only to an ideal, or pure, situation of which any actual situation will only be an approximation.

I believe, however, that Polanyi would here disagree with Little. Polanyi seems to think that the purity of scientific models is no greater than those of the humanities. Indeed, much of what Polanyi was concerned to do was to "bridge the gulf . . . [which] supposedly separates scientific from humanistic knowledge, attitudes and methods." At the end of his essay, "Reconstruction," Polanyi writes:

> In view of what we have now seen, we can surely bridge this gulf [between scientific knowledge and knowledge in the humanities] completely. We can now see that not only do the scientific and the humanistic both involve personal participation; we see that both also involve active use of the imagination. That the various humanities are heavily entangled with the imagination has always been very clear to almost anyone; but that imagination has an essential role to play in science as well has rarely been glimpsed. . . . If, however, as these chapters have tried to show, personal participation and imagination are essentially involved in science as well as in the humanities, meanings created in the sciences stand in no more favored relation to reality than do meanings created in the arts, in moral judgments, and in religion. . . . To have, or to refer to, reality—in some sense—may then be a possibility for both sorts of meanings, since the dichotomy between facts and values no longer seems to be a real distinction upon which to hang any conclusion.[28]

Given Polanyi's levelling of the traditional distinction between the sciences and the humanities, I believe it is fair to maintain that he would think that there are valid generalizations which can be made just as well in ethics as in the natural sciences.

In conclusion, particularism will win the day if generalism is wedded to a positivistic paradigm wherein it is thought that in order to count as genuine, knowledge must be completely specifiable and formalizable. Contrary to what particularists aver, there is a place in ethics for generalizations which count as genuine knowledge, if such generalized knowledge is recognized for what it is—personal knowledge.

Endnotes

1 In what follows I shall be assuming a cognitivist view of morality.

2 For a discussion of the role of emotion in ethics see Nancy Sherman, "The Place of Emotion in Kantian Morality" in *Identity, Character and Morality: Essays in Moral Psychology*, ed. Owen Flanagan and Amelie O. Rorty (Cambridge, Mass.: MIT Press, 1990).

3 Jonathan Dancy, *Moral Reasons* (Oxford: Blackwell, 1993), pp. 64-65. Italics his.

4 Dancy quoting George Eliot, *The Mill on the Floss*, end of Bk. 7, chp. 2 in *Moral Reasons*, p. 71. Interestingly, Hilary Putnam quotes Eliot *(Middlemarch*, chp. 61) to the opposite effect in "Taking Rules Seriously—A Response to Martha Nussbaum" in *New Literary History*, vol. 15, 1983, p. 195.

5 Dancy, p. 92.

6 Dancy, pp. 83-4.

7 "The Body-Mind Relation" in *Society, Economics & Philosophy: Selected Papers of Michael Polanyi*, ed. R.T. Allen (New Brunswick: Transaction Publishers, 1997), p. 317. Emphasis mine.

8 This example is adapted from David McNaughton, *Moral Vision* (Oxford: Blackwell, 1988), p. 196.

9 *Op. cit.*, p. 81.

10 "Genius in Science" in Allen, *op. cit.*, p. 271.

11 Thanks to Sean McKeever and Michael Ridge for a useful discussion of this issue in their unpublished paper, "The Many Moral Particularisms: An Exercise in Meta-Ethical Discernment."

12 "Authority and Conscience" in *Science, Faith and Society* (University of Chicago Press: Chicago, 1946), p. 58.

13 "Reconstruction" in *Meaning* (Chicago: University of Chicago Press, 1975), p. 61. See also *Personal Knowledge*, corrected ed. (Chicago: University of Chicago Press, 1962), p. 324.

14 *Ibid.* , p. 52.

15 *Ibid.*

16 *Ibid.*

17 *Op. cit.*, p. 348-9.

18 I say that principles are only in some ways analogous to comprehensive entities because, while they share with comprehensive entities a fundamental indeterminacy, this indeterminacy does not, in the case of moral principles, produce through subsidiary awareness a quiddity which is logically distinct from the particulars of which it is formed, as it does in the case of the sort of comprehensive entity with which Polanyi is concerned. In his essay "Personal Knowledge" in *Meaning* Polanyi makes a distinction between two different types of unspecifiability. He writes, "Thus subsidiaries are—for this reason and not because we cannot find them all—*essentially* unspecifiable. We must distinguish, then, between two types

of unspecifiability of subsidiaries. One type is due to the difficulty of tracing the subsidiaries—a condition that is widespread, but not universal; the other type is due to a sense deprivation which is *logically* necessary and in principle absolute." P.38. Emphasis his. I would contend that moral principles have the former sort of unspecifiability.

[19] "Reconstruction," *op. cit*., p. 56. Emphasis his.

[20] "The Scientific Revolution," in Allen, *op. cit*., p. 334.

[21] "Reconstruction," *op. cit*., p. 57.

[22] Polanyi begins his essay, "Genius in Science," by saying, "We accept the results of science, and we must accept them, without any strict proof that they are true. Strictly speaking all natural sciences are inexact." *Op. cit*., p. 267.

[23] Polanyi writes, "[A]ll meaningful integrations (including those achieved in science) exhibit a triadic structure consisting of the subsidiary, the focal, and the person, and all are thus inescapably *personal*." "Reconstruction," p. 64. Emphasis his. In "Creative Imagination" Polanyi writes, "The content of any empirical statement is three times indeterminate. It relies on clues which are largely unspecifiable, integrates them by principles which are undefinable, and speaks of a reality which is inexhaustible." Allen, *op. cit*., p. 264.

[24] "Science and Reality" in *Science, Faith and Society,* p. 29 and 30.

[25] "Creative Imagination" in Allen, *op. cit.*, p. 249.

[26] *Ibid*., p. 262.

[27] Margaret Olivia Little, "Moral Generalities Revisited" in *Moral Particularism,* Brad Hooker and Margaret Little, eds. (Oxford: Oxford University Press, 2000), p. 291, n. 5.

[28] "Reconstruction," pp. 64-5.

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