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NEWS AND NOTES

Our last number came out just too late to include the news that Professor John Polanyi had jointly won a Nobel Prize for his work on chemical reaction dynamics. He has our belated but nonetheless hearty congratulations. Some of you who knew Magda have remarked what a pity it was that she never lived to see it. And the newspaper of Manchester University - a biased source! - said of the prize 'It is made all the more meaningful since many people considered it was nothing less than a miscarriage of justice that his father before him...did not win that award'.

We have heard that Drusilla Scott's Everyman Revived - The Common Sense of Michael Polanyi (reviewed by Lesslie Newbigin in Convivium 21) has been reprinted, and is available from The Book Guild, Temple House, 25 High Street, Lewes, East Sussex BN7 2LW.

W.J. Neidhardt has kindly sent us a copy of his article published in the Asbury Theological Journal last year, 'Qualitative-mathematical relationship analogies in natural science and theology - the science of gentle hierarchies'. Starting from the premise that theology and science presuppose an intelligible universe, Neidhardt goes on to demonstrate that both disciplines use a similar approach to 'relationship analogies', and cites as examples Niels Bohr's wave-particle complementarity and the dialectical thinking of Karl Barth.

D. Bagchi.

A Kantian Critique of Polanyi's 'Post-Critical Philosophy'

During the past three-and-a-half years I have read seven issues of Convivium with mixed feelings. On the one hand many of the sentiments expressed in the name of Polanyi I have found most agreeable: the importance of passion and commitment in pursuing the truth, the insufficiency of a purely materialistic (or positivistic) explanation of the world, the importance of distinguishing between logical levels, the close connection between ontology and epistemology, the priority of faith over knowledge—to name just a sampling of the doctrines I have found interesting and worthy of assent. On the other hand, however, I have also been surprised to find in the same pages scathing criticism of 'transcendental' or 'critical philosophy' in general and of Kant in particular. After reading the last issue (number 23), with its juxtaposition of typically undefended rejections of this philosophical tradition together with numerous affirmations of the very doctrines defended therein, I decided finally to break the ice and dive headlong into the waters of Personal Knowledge (hereafter PK) in hopes of discovering the extent to which these misunderstandings can be
traced to misunderstandings instigated by Polanyi himself. To my surprise, the misunderstandings of the disciples seem in this case to be drawn almost entirely from the words of the master—a situation which is not often the case when comparing the works of great philosophers with those of their commentators. In this essay I shall use Kant's philosophy as a sounding board to help pinpoint some unfortunate misunderstandings contained in PK.

In his section on 'Logical Levels' (PK 343-346) Polanyi states what I think we would all want to uphold, namely that 'A man's illusions are not the same as his knowledge' (PK 344). Yet nowhere in that section, so far as I can see, does he actually explain how such a distinction can be made (or justified, once a person asserts it) in terms of his criterion of 'personal knowledge'. If 'I believe p' and 'p is true' are identical assertions, as Polanyi suggests on several occasions (see e.g. PK 305), if they merely represent the 'personal' and 'universal' poles of my commitment to p (see e.g. PK 255, 313), then on what grounds can a person distinguish between one belief which is true and another which is not? The natural answer is to suggest that certain universally accepted rules must be appealed to in order to help us sort out which beliefs deserve to be held with 'universal intent' (i.e. which can be asserted as 'true'). But Polanyi disallows such a suggestion: 'To accept commitment as the only relation in which we can believe something to be true, is to abandon all efforts to find strict criteria of truth and strict procedures for arriving at the truth' (PK 311). I find this demand most unreasonable. Why does the fact, that believing a thing to be true implies commitment to that belief, preclude the legitimacy of establishing objective criteria for truth? In contrast to Polanyi, I would argue (along Kantian lines) that committing myself to a belief (as opposed to regarding it as merely a personal opinion) requires a simultaneous commitment to some (strict, and even—dare I say—objective) criteria for truth. If all Polanyi really wants to prove is that it is impossible to 'eliminate' the 'personal coefficient' (PK 254) altogether, then I would certainly want to agree. But on many occasions he seems at least to be arguing for a thesis rather more extreme than this—and it is this extreme view which I have trouble accepting.

Polanyi argues that 'impersonal meaning is self-contradictory' (PK 253) because 'only a speaker or listener can mean something by a word, and a word in itself can mean nothing' (PK 252). 'The framework of commitment', he asserts at PK 303, 'necessarily Invalidates any impersonal justification of knowledge.' These claims seem to me to be both true and false. It is quite true that words in isolation from their use within some context have no inherent meaning and that an entirely impersonal account of knowledge could not justify itself. Nevertheless this does not mean that words whose meanings are understood cannot be used impersonally, or that impersonal knowledge is always a false ideal. Kant clearly acknowledged the need to 'deny [impersonal] knowledge, in order to make room for [personal] faith' (Critique of Pure Reason [hereafter CPR], p. Bxxv). But he meant something
quite different by this than what I think Polanyi means. Kant meant to acknowledge essentially three points: (1) one cannot enter an epistemological system without adopting a rational faith in some key presupposition (e.g. in the 'thing in itself') as its unknowable starting point; (2) once such faith is implemented as a key to open the door to such a system, the conditions for objective knowledge can be outlined impersonally (i.e. without any explicit reference to faith); and (3) faith comes in again when deciding what to do with possible knowledge claims which do not fit perfectly with the given criteria for truth. It seems, therefore, that the perspectives between which Kant carefully distinguishes in order to show how they are integrated, Polanyi merely blurs together as examples of personal knowledge. For Polanyi faith and knowledge are always thoroughly intermixed, because he recognizes only one perspective from which the world can be viewed, the empirical. He would accept (1) and (3) but reject (2). Kant admits that objective knowledge must recognize that it depends on faith for its ultimate justification, and that it must leave room for faith in other matters (i.e. it is not all sufficient), but in return for this it is given full reign over its rightful territory. He pave the way for the reductionist to reduce the reducible, so long as he recognizes the irreducibility upon which the very possibility for reduction is based. For once we have committed ourselves to the truth of a given belief or system of beliefs, the truths arising out of this context can be viewed apart from our commitment, so that a set of strict criteria for truth within that system can and do become very valuable rules to clarify and follow. Moreover, it is arguable that an awareness of such criteria within a system is more important for establishing truth than an awareness of the personal commitment which justifies such criteria, because a person can be (and generally is) unaware of his or her presuppositions and yet can still make valid discoveries within the system. But if such discoveries contradict the criteria for truth within that system, they will be false, and hence worthless to the system.

The one-sidedness of Polanyi's theory of meaning is well illustrated when he says 'it is as meaningless to represent life in terms of physics and chemistry as it would be to interpret a grandfather clock or a Shakespeare sonnet in terms of physics and chemistry' (PK 382). But would in fact the latter pair of interpretations be meaningless? I think not. The physicist and chemist would have some perfectly legitimate things to say about the mechanics of a grandfather clock or about the paper and ink used to print a sonnet. And what they say would have meaning, objective meaning! Polanyi's point (I hope) must be that an account in terms of physics and chemistry alone would not suffice to bring out the full meaning of the object under consideration. But how many physicists or chemists would say that it does? As it stands, Polanyi's assertion would be true only if 'meaning' means 'personal meaning' and if the physicist and chemist interpret things using impersonal meanings. Yet this latter is precisely the
view Polanyi is trying to combat, so it would seem odd if he were presupposing it in his argument!

The only explanation I can think of for why Polanyi adopts an exclusivist approach to the nature of truth is that his 'philosophy' (to the extent we can call it that—see below) is primarily not, as he would have us believe, merely a working out of his personal calling. It is that to be sure, but it is also (viewed objectively?) largely a reaction against the dangers of 'positivism', or 'objectivism', or—what he seems to regard as virtually the same animal—'critical philosophy'. By 'reaction against' I mean to imply that Polanyi spends so much effort in saying 'no' to the positivist that his own work tends at times to take on a character not unlike his opponent. Polanyi seems to share many of the presuppositions of the positivist, such as that only one kind of knowledge is valid (personal knowledge), and that our 'modern society' is right in looking to the scientist as a 'guide' who can give us the authoritative word on matters of knowledge (see e.g. PK 375); but he swings the pendulum to the other side by replacing 'objectivist' epistemologies with what seems at bottom to be a 'subjectivist' epistemology: 'The only sense in which I can speak of the facts of the matter is by making up my own mind about them' (PK 316). Kant, of course, is also a subjectivist of sorts (though he is an objectivist as well). Indeed, I fail to see how Polanyi's statement here differs (aside, perhaps, from being an epistemological maxim rather than a practical exhortation to the man on the street) from Kant's 'sapere aude' ('Have courage to use your own reason'), which is flatly rejected as part of the 'Enlightenment' (and therefore wrong) at Convivium 23, page 21.

Polanyi does claim that 'the personal...transcends the disjunction between subjective and objective' (PK 300); but he never, so far as I can discover, explains how personal knowledge breaks away from mere subjectivity without the help of strict (objective) rules. For instance, what gives him the right to reject astrology or alchemy, as he does on several occasions (see e.g. PK 183, 354), as meaningless or false, or to judge of 'a Zande witch doctor' that 'his rationality is altogether deluded' and that 'as an interpretation of natural experience it is false' (PK 318)? This, I believe, is nothing but positivism disguised in the clothing of personal knowledge. (Doesn't the Zande also have a duty to accept his 'calling', which 'may be taken to include the historical setting in which [he has] grown up' (PK 324)?) Polanyi agrees with the positivist in believing that 'science is important—indeed supremely important—in itself' (PK 183), but argues that 'science' must be redefined in terms of 'the perspective of commitment' (PK 317, 328), i.e. in terms of personal knowledge.

Positivism seems to be regarded by Polanyi as a purely scientific prejudice. He shows little (focal) awareness in PK of the fact that positivism is also (indeed, primarily) a philosophical movement, or a set of philosophical presuppositions. Consequently, the personalist science he puts in its place is supported by very few explicitly philosophical arguments.
Instead Polanyi concentrates on what Kant would call 'empirical psychology' --i.e. on examining how knowledge actually arises (e.g. in children or animals). He shows no awareness of the difference between this and 'transcendental philosophy'--i.e. abstract reflection on the necessary conditions for the possibility of experience. His bias can be seen, for example, when he analyses 'discovery', which he says occurs only in science (!), and compares it with 'problem solving' in mathematics, and 'invention' in technology (PK 124ff). Rather than balancing these with analyses of various modes of creativity in the humanities, such as 'insight' in philosophy, he ignores this domain altogether. (He does, of course, admit the legitimacy of systems other than science, such as religion and art (PK 202), and even provides some helpful clues as to what such systems are on about. However, he distinguishes carefully between them and science by saying they 'are tested and finally accepted' by 'a process of validation', whereas scientific tests proceed by a process of 'verification'. Unfortunately, he does not clarify how this difference affects the participation of personal elements in the two types of knowledge which result.)

Polanyi makes no attempt to hide his own emphasis on science (except perhaps in the subtitle of the book, which could easily mislead the reader to expect 'a Post-Critical Philosophy', rather than a psychology and theory of science; perhaps this is why he includes the word 'Towards'). He says, for instance, that his purpose 'is to show that complete objectivity as usually attributed to the exact sciences is a delusion and is in fact a false ideal' (PK 18). At PK 256 he explains that 'objectivity...proceeds by a strict process, the acceptance of which by the expositor, and his recommendation of which for acceptance by others, include no passionate impulse of his own.' Polanyi's alternative is that scientists should follow his example, for he accepts the scientific theories of others 'personally, guided by passions and beliefs similar to theirs, holding in my turn that my impulses are valid, universally, even though I must admit the possibility that they may be mistaken' (PK 145). 'The selection and testing of scientific hypotheses are personal acts' (PK 30), from which he infers that scientific knowledge must be regarded as personal knowledge.

The deceptive thing about all of this is that it is true, but tells only half the story. Kant would certainly agree that objectivity cannot exist without being supported on a subjective foundation; but for him this foundation comes not in the form of empirical elements such as passion and belief, but in the form of transcendental elements (i.e. synthetic a priori rules) which make it possible to communicate objective facts as deserving of universal assent. Such transcendental elements are usually 'tacit' in our experience, except perhaps when we are doing philosophy; but this fact about our personality does not make these elements personal in Polanyi's empirical sense. Nor does it mean that personal factors such as passion and belief play no part in determining how Kant actually expressed himself. On the contrary, the perceptive reader of Kant can detect just as many pas-
sionate assertions, and just as many expressions of personal belief, in his writings as can the perceptive reader of Polanyi. Polanyi misunderstands the philosophical concept of objectivity if he thinks it rules out the presence of such personal elements on any level whatsoever. (And so do the positivists, of course.) It does not rule them out, but merely seeks to establish a perspective which abstracts from such elements even though it admits they are there, so that (as Polanyi himself would put it) our 'universal intent' can be made explicit. Kant is claiming to have laid hold of something which transcends our particular passions and binds us together necessarily as persons in communion with each other in so far as we admit to being rational, something the particular expression of which (even Kant's) will no doubt be coloured by one's own intellectual passions, but whose root lies deeper (or at the opposite pole altogether) and as such provides the very earth in which our passions can sprout and grow! Thus his transcendental philosophy is not so much impersonal as transpersonal: it is not like an 'anonymous cheque', as Polanyi suggests, but like a cheque signed by everyone and made payable to everyone.

Polanyi never explains how universal intent can itself be grounded in personal knowledge. This is no surprise, however, because its ground lies elsewhere: 'all our knowledge begins with [personal] experience', as Kant says at CPR B1, but 'it does not follow that it all arises out of experience'. Another way of saying the same thing is that only persons can adopt perspectives on the world, but this does not preclude the possibility of a person adopting an 'impersonal' perspective by abstracting from our own subjectivity as far as is possible--i.e. by committing ourselves to the pole of universal intent rather than that of personal knowledge. Polanyi himself acknowledges that 'the degree of our personal participation varies greatly within our various acts of knowing' (PK 36), and even that classical physics closely approximates 'a completely detached natural science' (PK 63). Given these admissions, it is difficult to see why he has such difficulty accepting the ideal of objective knowledge, so long as it is recognized as an ideal to which we can at best approximate but never fully realize in its perfect form as applied to empirical facts. For objective knowledge is personal in much the same sense that death is a part of life, or darkness a form of light, or cold a degree of heat: to reject one concept is implicitly to reject the other, since such concepts are defined by their opposites (what could 'good' mean if there were no 'evil'?). Polanyi's ill-defined concept of 'universal intent' either means 'approximation to objective knowledge' or, as far as I can see, it means nothing significant at all. But if this is what is means, then his 'two poles of commitment' might as well be called 'personal' and 'impersonal'--thus resolving the dilemma which keeps cropping up throughout PK by putting personal knowledge in its proper place, as one valid perspective, rather than the valid perspective on the world.

In contrast to Polanyi's approach, Kant believed that an objectivist
understanding of scientific knowledge was correct as far as it goes, but that it represents only one perspective on truth. Objectivist science is therefore not to be redefined, but subordinated to the primary standpoint of practical reason. Kant's first Critique, with its limitation of knowledge and definition of strict criteria for objectivity, has often been used by positivists as support for their position. Indeed, something akin to positivism is propounded in CPR, but only as composing one standpoint (the theoretical) from which the world can be viewed in reflecting upon it. Theoretical knowledge does not tell us how the world we experience actually is, but only how it will appear to us if we choose to view it theoretically (i.e. objectively). Kant's intent, however, was not to limit all our knowledge to the bare facts of a positivist science. Quite to the contrary, his intent was to limit the positivist scientist's knowledge to the realm of objective facts, and thus to free us to develop other sorts of knowledge from other, equally valid, standpoints. In fact, the third Critique is devoted to an expansion of science beyond the limits of theoretical, objective knowledge, by showing that the scientist often has to work not only on mechanistic presuppositions, but on teleological (purposive) ones as well, especially when dealing with organisms. This is, in fact, quite consistent with much of what Polanyi is attempting in PK, especially when he discusses the scientist's 'discovery of rationality in nature' in terms of 'the art of knowing' (PK 64).^2

The great danger in Polanyi's approach is that, if science necessarily includes Polanyi's blurred concept of personal knowledge, and if science is allowed to retain its false primacy, then we are in danger of losing even more to the authority of the scientist if we commit ourselves to Polanyi's programme of personalist positivism than if we accept the old objectivist positivism, which, try as it might, could not succeed in explaining our personhood in scientific terms. Objectivist positivism is deluded because it believes it can explain away our personhood without taking account of aspects of our experience such as those Kant discusses in the second and third Critiques—an ideal which most people these days merely snicker at as being obviously false. But personalist positivism is dangerous because it requires us to submit our personhood to the authority of our tradition, and hence to the scientist as its guardian, before we can discover what is true. It seems to me that it tends at least to deny the legitimacy of any non-scientific perspective on truth.

This criticism of Polanyi is, of course, not entirely fair, because he does try to recognize the proper role of 'the wider domains of a complex modern culture' (PK 375; see also 202). Nevertheless, I think there is more than a grain of truth in what I have said, for Polanyi does place science on a pedestal of authority which, especially given his mono-perspectival epistemology, would give the scientist a good deal more power than under an epistemology which takes into account the principle of perspective as it can be found, for example, in Kant.^3
While I was preparing to write this paper, a friend asked me 'Are there any positivists around anymore?' Rather than recounting my answer, I will leave the reader to answer that one. Suffice it to say that positivism is no longer the threat—in philosophy at least—that it perhaps was thirty or forty years ago. The question which interests me more is: 'If it is no longer the positivists who pose the major threat to the philosopher, who does?' The answer Kant gives is still the most relevant answer to this question today. Polanyi adopted a position of personal 'dognatism' (as he himself calls it at PK 266) in order to combat the objectivist tendencies of sceptical positivism. In Kant's day the dogmatic and sceptical ways of doing philosophy were already well developed. But rather than siding with one or the other, he argued that the most promising road for the 'Critical' philosopher is the middle road: the enemy is the extremist, whether in the guise of dogmatism or scepticism, personalism or positivism. And the extremist is the person without a sense of the role of one's perspective in defining what is true. In Polanyi's work there are, I contend, two strains of thought: one which ignores the principle of perspective and one which depends upon it—hence one which is to be rejected as extremist, and the other, accepted as properly critical.

By now it should be apparent that Polanyi grossly misrepresents 'critical philosophy' in general and Kant in particular in his chapter on philosophical doubt (PK 269-298). Polanyi uses the word 'critical' in an anomalous sense, according to which it refers generally to the whole intellectual movement which, over 'the past four or five centuries...gradually destroyed...the whole medieval cosmos' (PK 265) by implementing its 'new analytical powers' (PK 268). Whereas it has been assumed over this period that we must deny faith in order to make room for knowledge (PK 266), he argues for the opposite approach: 'We must now recognize belief once more as the source of all knowledge.... No Intelligence, however critical or original, can operate outside such a fiduciary framework.' He shows no awareness that Kant had already argued for precisely such a relation between faith and knowledge (see above) two centuries ago, or that the name Kant gave to his System was 'Critical philosophy'. (And Kant, of course, is not the only philosopher in the last four hundred years who has admitted that synthesis is as important as analysis! For instance, the absence of any mention of Kierkegaard, with his emphasis on passion and commitment, is particularly conspicuous.)

Near the beginning of his chapter on doubt Polanyi proclaims: 'It has been taken for granted throughout the critical period of philosophy that the acceptance of unproven beliefs was the broad road to darkness' (PK 269). This generalization is so inaccurate that it doesn't even make a good joke! Polanyi supports his judgment (PK 269-270) by quoting Kant on the nature of mathematics (CFR B851), where, if anywhere, 'mere opinion' is out of place (or would Polanyi want to defend a mathematician who holds the opinion that $2+2=5$?), and by quoting Kant's criticism of Hume (CFR B805-6),
where it is not doubt which Kant is advocating, but certainty. Nothing Polanyi says about Kant suffices to put him in the tradition of Cartesian doubt, which he consistently eschewed. At PK 271-272 Polanyi does quote CTR B766, where Kant describes the importance of criticizing reason in all its endeavours, which Polanyi apparently takes to be equivalent to doubting. But Kant's understanding of criticism is just the opposite: rather than trusting reason enough to doubt any and all knowledge of objects (à la Descartes), Kantian criticism asks us to trust our knowledge enough to criticize any and all uses of reason. Criticism therefore rests ultimately, as I have already said, on a rational faith. Finally, Polanyi criticizes Kant's view of certainty in mathematics again at PK 273-274, arguing that Kant has failed to realize that the truth of any mathematical judgment depends on 'the acceptance of some not strictly indubitable framework'. From what I have said it should be obvious that Kant would agree wholeheartedly with Polanyi on this point. Yet this does not contradict Kant's plea for certainty in mathematics, for the acceptance of an overall (fiduciary) framework is not strictly a mathematical judgment. Once we have agreed to have faith in a given framework (e.g. one which defines '2', '+', '-' and '4' in such a way that 2+2=4), it is surely proper to expect the valid judgments within that framework (e.g. that 2+2=5' is always false) to carry a high level of certainty, as Kant suggests.

The irony of Polanyi's critique of philosophical doubt is that, whereas he sets out to defend faith in the face of doubt, it seems to me that he ends up criticizing the very certainty which faith is able to produce, and as a result devotes the bulk of the chapter to a defence of the significance of doubt. What else is his frequent reminder that we 'may be mistaken' about what we regard as knowledge, if not a refigured version of Cartesian doubt?! A constant awareness of the perspectival difference between the acceptance of a systematic framework (by faith) and the acceptance of an element within that framework (by knowledge) is perhaps the most fundamental lesson to be learned from Kant. But Polanyi, it seems, never recognized this clearly enough to find a place for it in his personal knowledge. Instead, he seems to have been satisfied with viewing faith on a lower level, merely as equivalent to a tacit doubt in the sufficiency of the articulate (PK 277).

The perceptive reader will have perhaps noticed that I have used phrases such as 'It seems to me...' and 'I believe...' rather frequently in my discussion of Polanyi's ideas. The reason for this is not, as might be suspected, that I wish to pay lip service to Polanyi's notion of personal knowledge by admitting tacitly that my own judgments are merely affirmations of my own beliefs, as uttered in my tradition, in keeping with my commitment to my calling. On the contrary, if the assertions which follow such qualifiers are true, then they are true for reasons quite apart from my belief that they are true. Admittedly, my knowledge of their truth is
personal in the sense that it is me who has decided to believe them; but if they are true, they would have been true even if I had never been born, or had never decided to study philosophy. Indeed, the need to use such phrases is, it seems to me, one of the best arguments against Polanyi's doctrine of truth as thoroughly personal: to admit merely that 'p seems true to me' or that 'I believe p is true' is not the same as to commit myself to the assertion that 'p is true', for the latter alone makes an objective claim. To commit oneself to an assertion objectively is to believe that it is true for everyone. (Hence Polanyi's frequent claims that he is really only expressing his own personal opinions in PK are hard to swallow: he is also clearly interested in persuading the reader to agree that what he says 'is true', in an objective sense--otherwise why would he have wanted to publish his viewpoints? That is, Polanyi seems to be trying to hide his universal intent by stressing that it is nothing but personal knowledge.)

My actual reason for including such phrases is because I am well aware that a single reading of a book with any depth to it is not sufficient to yield complete understanding. That is, I have not allowed myself to indwell Polanyi's ideas enough to feel confident committing myself wholeheartedly to the truth of my interpretive judgments of his work. I admit that I may have missed something crucial, so that my criticisms may be largely misguided. (Yet I would not want to make the same claim for my interpretive judgments of Kant's philosophy, which is why such qualifying phrases will not be found in my discussion of his views.) My hope is that, as an 'outsider', my judgments of Polanyi will nevertheless be of some use to 'insiders' in reassessing their positions, and in 'leaning out' of their personal knowledge at least to the extent of recognizing the truly critical (rather than post-critical) character of that aspect of Polanyi's thought which is of lasting value, and of its consistency with much of the philosophical tradition which he unfortunately believed he was rejecting.

Notes

1. I demonstrate the legitimacy of this interpretation of Kant's view of faith and knowledge in two articles: 'Faith as Kant's Key to the Justification of Transcendental Reflection', Heythrop Journal 25 (1984), pp. 442-455; and 'Knowledge and Experience--An Examination of the Four Reflective "Perspectives" in Kant's Critical Philosophy', Kant-Studien 78 (1987).

2. Like Polanyi, Kant holds in the third Critique that the knowledge revealed from this new, purposive standpoint is both objective and subjective. Polanyi's analysis of problem solving and discovery as a search for the unknown (RF 127) is also consistent with Kant's discussion in CPR of the unconditioned and of the ideas of reason. The nature of discovery can best be understood in Kantian terms as a search for the 'analytic a poste-
priori', as I have argued in 'A Priori Knowledge in Perspective: (II) Naming, Necessity, and the Analytic A Posteriori', The Review of Metaphysics 41 (1987). The latter is the sequel to 'A Priori Knowledge in Perspective: (I) Mathematics, Method, and Pure Intuition', The Review of Metaphysics 40 (1987); in both papers I defend the a priori character of mathematics, which Polanyi discounts with a stroke of the pen, claiming that 'this view has been proved to be mistaken' (PK 274). It is rather surprising, incidentally, that, instead of saying 'I believe that this view is mistaken', Polanyi should couch his rejection in such objectivist terms, especially since he does not even provide a reference where the reader can inspect this alleged 'proof'.

3. Aside from the papers mentioned in the previous notes, I have defended and elaborated upon my interpretation of Kant's principle of perspective in the following papers: 'Six Perspectives on the Object in Kant's Theory of Knowledge', Dialectica 40.2 (1986), pp. 121-151; 'The Architectonic Form of Kant's Copernican Logic', Metaphilosophy 17.4 (1986), pp. 266-288; and 'The Principle of Perspective in Kant's Critical Philosophy', (currently being considered for publication in Kant-Studien).

S. Palmquist


I read Harry Prosch's book on Michael Polanyi with eager interest. It is a work of devoted study, written from a wide knowledge of Polanyi's work, and a background of philosophical knowledge which sets it in perspective. I found in the first three parts - "Diagnosis-Perscription-Treatment" that I was often struck by a connection picked up and illuminated by Prosch among the strands of Polanyi's thought, which had not struck me so precisely before but now seemed important and clearly right. I would instance his account on pages 60 and 61 of how, while the basic mechanisms of visual perception are structured to function towards the attainment of a stable coherent view of the world, they work mechanically and so cannot sort out true coherences from illusions; on the other hand we as persons "are performing one single mental act in seeing an object against a background". The physiological events in our bodies which are part of the skill of perception, are known to us only subliminally but they are part of the galaxy of clues of which we take account in our act of perceiving. This Prosch calls "a very important point for Polanyi. For if the factors in perception that lie entirely below the level of any possible focal awareness are not factors of which we are at least subsidiarily aware, then perception is not
a single purposeful act, it is at bottom merely a caused event - and what we call knowledge, being rooted in our perception, is not then a result of our purposeful efforts. But...then of course it could not have the quality of being right or wrong.... It must intend to be right, in order ever to be mistaken. If perception and knowledge were not intentional acts then truth could not be understood to be an ideal towards which we really aspire...having lost our respect for the ideal of 'truth' as a truly operative intention in persons, we have lost our basis for a respect for each other's opinions." I had not before so clearly connected Polanyi's account of perception with the basis of a free society and I found that exciting. Other instances I would give of points I found illuminating: on page 19 the account of how Polanyi came through chemistry to appreciate "the value of the inexact". "By comparison with descriptions in physics, he held, descriptions of chemical substances and the art of dealing with them lie quite near to human behaviour." As chemistry would suffer if chemists were frightened by physicists into applying exact laws to their subject, so with the study of persons. And on page 94, Prosch's account of how Polanyi dealt with our understanding of classes and classification; his application of the idea of tacit knowing to formal induction, seemed to me very clear and helpful.

These are just a few examples of a quality I found all through these parts of the book, of what might be called clear and connected ideas. But then, I have to admit, in later chapters I came to a lot of difficulties, all connected with Prosch's insistence on saying, and on attributing this view to Polanyi, that the realities we come to know through science are different from the realities we come to know through art, religion, mathematics. Prosch is very determined about this and spends a lot of time arguing against the various people who disagree, such as Richard Gelwick, Thomas Torrance, Ronald Hall, Sheldon Richmond, and Marjorie Grene. This is a very puzzling area; to start with it is strange that Prosch and Gelwick, who both spent a good deal of time with Polanyi in his last years, came away with opposite impressions of what Polanyi intended to say on this matter. (In this review I have not discussed the treatment of this distinction between different realities in Meaning, since I cannot tell how much of that book is Polanyi and how much is Prosch.) Prosch has given quite a large proportion of his book to this controversial area, and it does seem extremely important for our whole understanding of Polanyi. In attempting an answer I will first ask what exactly is the distinction Prosch is making, and says Polanyi made, between the realities known by science and those known through religion, poetry and the arts? Then, can this distinction be found in Polanyi's earlier works? And lastly what effect does it have on our understanding of Polanyi's main lines of thought?

The essential distinction that Prosch says Polanyi made in the subject matter of these two kinds of knowing is stated in his book on p 249 (and in other places). It is this: "For Polanyi...reality is defined univocally
as that which we expect to show itself in indeterminate ways in the future. Yet according to Polanyi there is one subset of realities which exist independently of our knowledge of them and which science seeks to uncover or disclose, as well as another subset of realities, those of the noosphere, brought into being in a sense by our creative efforts through them to achieve meaning in our own lives. The realities of this second subset are real in that we may expect to see more of what they mean as time goes on - as in great works of art and religion. They are comprehensive entities whose depths may surprise us. They are also real in being valid. But it would be an illusion to think they existed before we discovered them." (My italics.)

Prosch expresses the indications by which we distinguish these two kinds of reality in other words too. It depends on whether the realities exist independent of our thought (p 256), or whether "it was man's mind that created...the principles of truth and beauty and morality" (p 139). But the basic form of the distinction is - did these realities exist before we discovered them?

This is exactly the paradox with which Robert Pirsig made play, asking what it meant to say Newton discovered the laws of gravity. Did it mean that "the disembodied words of Sir Isaac Newton were sitting in the middle of nowhere billions of years before he was born, and that magically he discovered them?" (Pirsig, Zen and the Art of Motorcycle Maintenance p 34) That would of course be absurd, but it would be equally absurd to say Newton invented the laws of gravity; that they did not operate before he thought of them. In that case Newton would have been in no position to invent or discover anything.

These paradoxes about inventing and discovering arise, Polanyi says, when we look from outside, without commitment, at things that belong together as parts of a commitment. "If we ask whether Euclid's theorems existed before they were discovered, the answer is obviously No, in the same sense as we would say that Shakespeare's sonnets did not exist before he wrote them. But we cannot therefore say that the truths of geometry or the beauty of poetry came into existence at any particular place or time, for these constitute the universal pole of our appreciation which cannot be observed noncommittally like objects in space or time." (PK p 396)

Polanyi has a lot to say about the relation of creation to discovery. He has taken us with great care through the evidence for the creativeness of discovery, and then through the evidence for the discovering quality of creativity - as when he points out (PK p 309) that a judge dealing with a case where the explicit framework of the law leaves open alternatives, must find the law, supposed to be already existing though yet unknown. In doing so the judge is under the compulsion of his obligation to the principles of justice, and what he says is the law will be accepted as part of the body of law - he has both created and discovered it.

Prosch's distinction bristles with difficulties. He says Science is
part of the noosphere, but its objects are not. But the objects of science are both created and discovered by the disciplined human imagination; there is no way of studying the physical universe untouched by human mind, as though all the discoveries of modern science had never happened. Newton's laws, Einstein's, Planck's, are part of the noosphere but they have changed the objects of science and we certainly believe that if they apply now, they always applied. And what about history - a subject which Polanyi treated at length but which Prosch hardly mentions. No doubt the facts with which history deals existed before we thought about them, but history is not simply a recording of facts, any more than science is. Historians are always selecting and interpreting 'the facts', indwelling in the minds of the historical characters so as to feel their situation and intention as they felt it. It is a creative study. It clearly has a relation to the 'facts' of the everyday world different from the relation which poetry or art has; different also from the relation which physics has. It does not fit into Prosch's simple two-way division of studies whose subject matter existed before and those where it did not.

Polanyi in 'The Study of Man' makes no such distinction, in fact he expressly disowns it, expounding instead a continuous range of knowledge from physics to the study of man, marked by more intense personal participation of the knower as he ascends the scale. He speaks of "the important fact that you cannot discover or invent anything unless you are convinced that it is there, ready to be found. The recognition of this hidden presence is in fact half the battle, it means that you have hit on a real problem and are asking the right questions. Even painters speak of solving a problem, and the writer's work is a quest following an endless succession of literary problems." (p 35) Polanyi makes no distinction here between the painter's or sculptor's 'reality already there' and the physicist's, so the "already there" factor implies no division for him.

Prosch makes his most revealing statement of his distinction in criticizing Ronald Hall's 'aestheticising' of science, where he says (p 263) that "if we think of science as another art form - if we aestheticise it - we must suppose that science, like art, has ascended to a position outside the 'historical', day to day experiences of man and really has nothing to do with them, which indeed Hall does assert. However, this contention is surely extravagant. Our technologies grow directly...from our sciences. What the chemists and the physicists do discover and interrelate into systems are interactions that structure our daily experiences, and which we use to understand them more fully and to control and redirect our existential situations. No such technology applicable to our everyday existence arises from art."

So here we see the basic view on which Prosch's bisection of knowledge is established. He believes that the only knowledge we can use to understand, control or structure our daily experiences is technology. Art, poetry, history, philosophy, religion - they are all castles in the air,
beautiful dwelling places for the spirit, adding to our dignity, but of no relevance, no power, in our everyday life. Such a belief can have nothing to do with the Michael Polanyi who set out to show how a false philosophy had plunged the world into violence and destruction - who wrote of the free associations within the democratic society - "These circles, these professional associations, are feared and hated by modern totalitarian rulers. They are feared more than are scientific associations, because the truth of literature and poetry, of history and political thought, of philosophy, morality and legal principles, is more vital than the truth of science. This is why the independent cultivation of such truth has proved an intolerable menace to modern tyranny." How could such truth be a menace if it has no effect in our daily lives? I have wandered to some extent into my second point - can this distinction be found in Polanyi's earlier writings? I do not believe it can, though I agree the distinction between verifying and validating can be found in Personal Knowledge. But this I think is simply an obvious distinction between the methods of various enquiries and does not imply that these studies have different realities for their object. I can verify the school's measurement of my child's height with a tape measure; I can validate the school's assessment of his character and progress by thinking about my own experience of him; but he is one entity and I am sure that he exists in all his aspects, independently of my thought. As Polanyi says - "The bearing of natural science on facts of experience is much more specific than that of mathematics, religion or the various arts." It's the tape measure rather than the informal review of experience. But they both bear on the facts of experience.

I have also mentioned some ideas in Polanyi's earlier works which are incompatible with Prosch's distinction - his belief in the power of thought, of ideals and moral truth; his insistence on the oneness of knowledge and the presence of creative powers throughout its range. Obviously much more evidence could be brought about this. But in the end one must appeal to Polanyi's great work as a whole - what was it if not to show the creativity of discovery, the oneness of knowledge, the indwelling found in all knowledge, the continuous advance to deeper personal participation as we go up the scale from physics to man as a moral being, to God? Harry Prosch understands Polanyi so well, how can he do a George Washington and chop the cherry tree in half with his little hatchet? For that is what I think he does - and that is all that really needs to be said about the effects of his distinction on our understanding of Michael Polanyi.

D. Scott.
Nature and the Noosphere: Two Realities or One? - Some Thoughts on Harry Prosch's Interpretation of Polanyi.

Are there two different kinds of reality, those that belong to nature and those that are the creations of the human mind and belong to the noosphere? This issue is raised already in Meaning, published under the joint authorship of Polanyi and Prosch, but which, in fact, is the work of Prosch alone, who used unpublished material from lectures given by Polanyi towards the end of his life. In his new book, however, Prosch gives a great deal more attention to the problems raised in Meaning, and a careful reading of his arguments in this later book make it easier, in my view, to pinpoint the confusion which, in the view of others besides myself, underlies his interpretation of Polanyi on the question of reality. What I am going to argue is that the confusion arises because Prosch does not apply the triadic structure of tacit knowing correctly to the artistic and religious quests, though his application of it to the scientific quest is unexceptionable. This article is an attempt to explain what I mean.

Any discussion of how Polanyi sees the distinction between the realities of nature and those of the noosphere must start from his analysis of the structure of knowing, which Prosch rightly makes his own starting point. He starts, in other words, from Polanyi's 'tacit triad', which shows - to quote Prosch's own words - that all knowing is a sort of doing or creating, the creation of a meaningful integration of subsidiary clues, dwelt in as a projection of perceptual objects and of the sciences.

For Polanyi, therefore, the meaningful integrations achieved by man in the noosphere 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. Perception does this, ordinary knowing does this, poetry does this, religion does this. These various kinds of integrations are all the same also in making use of the creative imagination and in that there is no way to establish their truth or their reality in a thoroughly detached, impersonal, objective way - even though they are all created with universal intent, not as subjective entities whose status is understood to be merely 'true for me'.

So far, so good. Prosch then draws attention to "the difference between the integrations and realities forming the noosphere and those existing prior to the noosphere". He is referring, of course, to the difference between the observable realities of nature, which are studied by science, and those realities which are creations of the mind. He does not question such realities as man's political, legal and economic systems, his languages, Michelangelo's Moses, Eliot's Wasteland, and so on, "That they are creations of man does not rob them of their reality", he says, "if
reality is understood as Polanyi understood it”, namely, as something that "will exhibit to us a presently indeterminate range of future manifestations", unpredictable by us on the basis of our present understanding." The problem arises when Prosch begins to discuss the question of origins. He does this when he speaks of the realities to which science refers as having their origin in nature, and contrasts with "(a)ll the rest of the noospheric realities engendered by man", implying that these cannot claim to have any origin elsewhere than in the mind. He is not, it must be noted, making a straight contrast between the realities of nature and those created by the mind, because he recognises that science itself is part of the noosphere and its theories are man-engendered. He argues, however, that the theories of science differ from the realities of the arts and religion, because the doctrines of science "refer themselves to those realities supposed to exist from origins that are not man-engendered".

This argument from origins seems to take us to the heart of the confusion. Prosch seems to be suggesting that, despite the fact that science is itself part of the noosphere, we have to make a distinction between the realities studied by science, which are not part of the noosphere, and "all the rest of the noospheric realities engendered by man", which "have, therefore, a validity differently based from that of science." He is saying, in other words, that the creations of art and the doctrines of religion do not refer to anything outside the mind that created them, and that this is why they cannot be verified, though they can be validated on some other basis.

In arguing that the arts and religion do not claim to refer to anything originating outside man's thought world (the noosphere), Prosch seems no longer to be working with the triadic structure of tacit knowing. In science, the triad is formed by the scientist, his theory and the observed reality. The scientist’s theory shapes his apprehension of the reality observed and represents the intellectual element in his knowing. Together, the reality and the theory about it constitute the objective and subjective poles of the framework of commitment within which the scientist works. In the artistic quest, the triad is formed by the artist, the work of art and the meaning or experience of reality he wishes to communicate through his work of creative art. In comparing the two triads, the scientific theory about facts of nature corresponds to the work of art, which may be a symphony, a painting, a poem, a sculpture or some other form of creative expression. Both science and the pursuit of the creative arts represent mind's creative activity and are forms of engagement with reality. The scientist articulates his findings in words or mathematical symbols. Artistic creations of different kinds are also means of articulating the meaning or experience of reality, which the artist wishes to express or 'body forth'. Similarly, religion has its own way of articulating religious experience, through hymns, prayers, the reading of Scriptures, credal statements and the use of sacraments, all of which, as Polanyi says are
aids to worship, and help the worshipper to focus his thought on the ineffable realities to which these religious symbols point, while functioning as 'signals of transcendence'.

The scientist's quest is usually concerned with highly specific matters of observable fact and with the truth or falsity of statements concerning these facts. The artistic quest is concerned with less specific, and possibly unobservable matters, which count no less as facts of experience. The facts of religious experience are the least specific and the most difficult to verify or validate and, as Polanyi says, we may be unable to give a straight 'Yes' or 'No' to the truth or falsity of statements concerning them, because answers of this kind are only appropriate where explicit doubt can be met by explicit evidence. Religion, says Polanyi, should be viewed as an indwelling rather than as an affirmation, because God, like truth and beauty, can be known only in serving him. We are back here with the paradox of responsible commitment to self-set standards, which figures so prominently in Polanyi's discussions of how we come to believe what we cannot prove.

None of the meanings we achieve, or the beliefs we hold, are wholly objective or wholly subjective; they are personal, which means that they have both an objective and a subjective aspect or pole. The scientist, generally speaking, confines himself to the study of the physical facts of nature, which are observable and measurable. He is not directly concerned with judgements of value or meaning. But only if he is a strict materialist would he suggest that the truth about a world in which values are as real as facts, and facts are inherently valuable, can be adequately studied by the canons of strict empirical method. It is because we live in a world where 'quality' is built into 'quantity' that reality manifests so many aspects, which need to be handled and experienced in different ways. This is also why it is necessary to articulate our experience of these realities in different kinds of language.

Language does not correspond, one for one, with experience in an itemized way. A word may denote a specific object or state of affairs in nature, but, equally, it may not do so. What is essential is that we should be able to interpret our words and symbols as meaning, and that this meaning should in some way be integrated into the thought world we already inhabit, and be accepted as part of our experience of reality, or as bringing us in some way into deeper contact with the values and meanings of our universe. The word 'cat' denotes a highly specific and observable fact of nature, and it is easy to relate to the reality observed. There is little problem in correlating the word with the reality. But our experience of reality covers a great deal more than physical objects, and our languages reflect this fact. If we accept Polanyi's definition of reality, we can take as real any experience we find as meaningful by our own active integration of relevant clues, providing that what we recognise as a meaningful coherence has an existence that may exhibit itself to us in
future in indeterminate ways. This definition represents a repudiation of idealist and materialist philosophies precisely because they try to construct a theory about reality in terms which fail to do justice to the reality of both physical matter and mental activity. Idealists treat philosophy as a theory of cognition; materialists as a theory about physical matter. But Polanyi’s realist theory is constructed in terms of lived experience of meaning, interpreted by relying on self-set standards of rationality, which are set by our own intellectual passions. This realist metaphysic forbids any sharp separation between things that are purely physical, observable, or verifiable and things that are non-observable but meaningful and which can only be validated with varying degrees of certainty. To make such a distinction implies a return to Cartesian dualism, or to a form of crypto-positivism.

Man himself is a physical reality immersed in thought, a unity of embodied meaning, who creates systems of belief about what constitutes reality and experiences it as embodied meaning, whether the embodiment is physical or conceptual. Science is one such set of beliefs. The sciences are intellectual systems, which claim to represent nature in its 'non-noospheric' aspect. But the scientist has the capacity to explore the realities of nature precisely because he lives in a world of thought and has devised appropriate symbols and language to express what he has discovered about its physical workings. As a scientist, he must submit to the canons of scientific procedure and concern himself only with nature as a system of physical relations and order. But the actual thought world of science is his creation, made possible by his power to work with symbols that have an intentional relation to himself as a being-in-the-world.

Outside the hard sciences, however, its strict methodological procedures do not apply, and the real world can be explored holistically, even if selectively. The artist, the poet, the religious seeker, even the mathematician are all motivated by a concern to elucidate and express true relations, and each believes himself to be in some sense exploring the truth about reality. We need to go back for a moment to Polanyi’s tacit triad. There is first the active mind, which makes sense of experience by recognising significant pattern; there is the theoretical or intellectual component, which is part of the noosphere and represents mind’s creative activity; and, thirdly, there is the hidden meaning which we strive passionately to understand and which, in some sense, seeks to disclose itself to us. By acknowledging the decisive part played by the intellectual passions in the natural sciences, Polanyi is able to show that the arts appear "no longer as contrasted but as immediately continuous with science, only that in them the thinker participates more deeply in the object of his thought."10 In both science and the arts, it is appreciation of different kinds of order and beauty that sustains our intellectual passions. We find always what we are looking for, guided by our intellectual passions, our self-set standards, and further assisted by training, which teaches us to
ask questions, devise symbols and adopt methods appropriate to the subject matter and its articulation.

Scientific language is denotative. The language or symbols of art are more allusive than denotative, though its allusions may be plain as well as indirect. However remote its allusions, art always has reference in some way to living experience and says something about our knowledge of reality, as opposed to being a mere expression of subjective feeling. However abstract, says Polanyi, art will echo some experience, and would be as meaningless to someone lacking any such experience, as arithmetic would be to a person living in a gaseous universe. And again, however meticulously descriptive and plainly expressive a work of art may be, it must never come any closer in referring to experience than crystallography does to crystals; no closer than a representation of a conceivable experience, framed in its own harmonious terms, can come to actual experience. Precise statements of fact or exact expressions of sentiment contained in a work of art tend to flatten it out to a map, (or) a report.  

It is clear to me that, in the above passage, Polanyi assumes that the arts, as well as the sciences, have their objective reference, and are concerned to articulate an experience of reality. I do not believe it would be different if he were speaking about religious experience. He always assumes that our knowing has this triadic structure and involves (1) the creative mind, (2) the noospheric component, which gets articulated in language or symbols of some kind, and (3) the objective component, which represents the reality experienced. Prosch seems to me to collapse (3) into (2) and to speak of the work of art and the experience of meaning which the artist seeks to articulate into a single, unipolar concept. If the same were done for science, the object studied and the scientific theory about it would also be indistinguishable. But a work of art, like a scientific theory, is a vehicle of communication, a means of conveying experience and of sharing beliefs or meanings believed to be true.

Scientists and artists, philosophers and theologians are all in the business of saying something about the nature of reality, whether the vehicle be a theory, a poem, a novel, a symphony, or some other symbolic form. Man exists simultaneously in two worlds: the noosphere and the physical order, and can express himself in symbols that derive from either or both. Materialism defines reality only in physical terms, and the ultimate dream of scientists - if they are materialists at heart - is to be able to articulate the findings of science by means of purely mathematical symbols. Idealism represents the view that only mind or spirit is ultimately real, and a true idealist would presumably expect the philosopher immersed in thought to be better equipped to know reality in its essential meaning than the unreflecting person, who merely enjoys physical participation in the observable world.

The truth, as Polanyi sees it, is that these two positions belong
inseparably together. His realist metaphysic takes the irreducible unit of reality as embodied meaning. This may have physical embodiment, or it may embody relations of a non-physical character. Either way, meaning and its embodiment belong irreducibly together and can be experienced as a significant pattern, both in thought and in the world. By his insistence that meaning can never be separated from reality, Polanyi establishes the preconditions for experience of the real world. Materialist and idealist philosophies both effectively destroy our capacity to know reality as a fact of experience; the one, by reducing it to measurable, observable, but meaningless physical forces and particles; the other, by reducing meanings to subjective notions that have no existence outside the mind. Both positions replace the polar structure of reality by a unipolar scheme, that offers us either meaning or its embodiment, but not both, and effectively dissolves reality into the alternative abstractions of disembodied meaning or meaningless bodies.

As Polanyi discovered, a valid epistemology has to work with the indissoluble unity of meaning and embodiment, which, as he also discovered, involves a triadic structure in which each component in the triad is accredited with full reality. It is no accident that Polanyi's epistemology turns out to be also an ontology of mind and leads him to accredit the reality, not only of the creations of nature, but also of the creations of the mind, which are symbols that enable man to articulate what he has experienced of reality. It takes a theologian to see in this triadic ontology a parallel with the Christian doctrine of perichoresis, which was a fourth century elaboration of the doctrine of the triunity of God. This resulted from Christian experience of God's revelation of himself in the person of Christ (also known as the Word of God). For the theologian, there is a sense in which the problem posed by God's need to be known by men is the paradigm case for all epistemological problems. It is worth reflecting that it became necessary to invent the doctrine of perichoresis, which means accrediting the reality of each member of the Godhead in terms which affirm the presence of 'all in each and each in all', without separation or confusion.

In Polanyi's epistemology, and with the help of his concept of 'indwelling', knower and known, subject and object, are held together in an indissoluble polar tension, which makes them part of a single, self-referring reality, yet without confusion or separation. This not only establishes the inherent intelligibility, rationality and meaning of all physical facts, but shows how conceptions formed in consciousness recreate, in the noosphere, realities that are objectively there in the external world, waiting to be assimilated and experienced in the world of thought. On such an interpretation of Polanyi's epistemology, Prosch would appear to be wholly misguided in suggesting that we can distinguish between the realities studied by science and those which we articulate in our works of art or religious symbols by arguing for a sharp distinction between 'nature'
and 'culture' and by saying that the realities of nature pre-exist our knowing and can be verified, while those 'artistic' or 'religious' realities we express through art, poetry, music and the symbols of religion, have no existence prior to our creation of them. Such a suggestion, it seems to me, betrays a hidden dualism of thought, a concealed assumption that the only true realities are measurable and verifiable realities, and that meaning, as such, belongs to the subjective world of culture and the noosphere. In other words, the facts of nature are objective and real, though inherently meaningless, while those of the mind may be meaningful, but are subjective and do not correspond to anything beyond the creative imagination. Surely, this is simply Descartes updated?

The real world to which Polanyi points is one in which fact and value are inseparable; one in which the knowing subject is part of the reality he knows, and in which lived experience is the only experience of reality there is. Because the claim to know is always dependent on self-set standards of rationality, we can never escape from the circularity of knowledge, by claiming for true knowledge some kind of impersonal detached objectivity. All reality is, in the end, personal, which means that it has both a subjective and an objective pole. This is because the knowing subject can never be anything other than part of the total reality known, and represents, as has already been said, the universe in its knowing and self-referring aspect. In other words, we live in a personal universe, in which nature and the noosphere must be viewed, not as two different and separate realities, but as aspects of a single, personal reality.

Notes

1. The noosphere is a term Polanyi borrowed from Teilhard de Chardin and used as a synonym for the 'world of thought' or 'cultural stratum' within which the human mind dwells. See The Study of Man p 60, PK p 388, et al.
4. Op Cit. pp 135/136. The passage quoted gives four footnotes, containing a large number of references from Polanyi's writings.
7. Op Cit. p 137.
8. See Personal Knowledge, pp 279/286.
11. Ibid.
12. A casual reading of some passages of Polanyi's own writings may occasionally, and inadvertently, lay him open to misunderstanding and give rise to confusion. I found one passage in Personal Knowledge where it might be argued that Polanyi distinguishes rather loosely between 'empirical reali-
ties' and 'artistic realities'. Prosch refers to this passage in his own book, and his comment is: 'I)t is clear from the context that these are not the same kinds of "reality". One he was careful to call "empirical", the other, "artistic".' p 250. Polanyi's actual sentence runs as follows: A scientific theory which calls attention to its own beauty, and partly relies on it for claiming to represent empirical reality, is akin to a work of art which calls attention to its own beauty as a token of artistic reality. (p 133, my italics.) My comment is that it is clear from the context that Polanyi is simply drawing attention to the power of a scientific theory to call attention to its own beauty. To suggest that Polanyi is deliberately contrasting the empirical and the artistic and that, by doing so, he is implying that only scientific theories have reference to realities outside the mind, while artistic creations do not, is, in my view, to read into the passage something that is plainly not there and exists only in the mind of Harry Prosch. Yet Prosch builds on this passage to argue that Polanyi makes such a distinction between 'empirical' and artistic' and aligns it with the distinction between the facts of nature and the noosphere.

J.O. Crewdson.

I first met Marjorie Grene at Leeds University in 1958. We were there under the wand of Roy Niblett who has always possessed a magic for creating memorable encounters. For me, this one turned out to be crucial. It led, almost immediately, to Personal Knowledge and soon after, to Michael Polanyi himself. The times when Marjorie Grene and Polanyi had worked closely together were still fresh in her mind and she talked much about them - of their first encounter in Chicago and then in Manchester.

The exemplary index in Personal Knowledge is Marjorie Grene's most obvious contribution. But there were others which are less easy to evaluate. Some of Michael's enormous range and grasp - especially in the biological sciences - was due to her. I am not suggesting that she wrote any of those great passages on emergent life or gave then their cosmic sweep. But there is in Personal Knowledge a familiarity with the newly arising philosophical problems of biology, psychology and anthropology which must, in part, have been due to this intellectual comradeship. One often comes on names or ideas in Personal Knowledge, especially in footnotes, which only seemed to come into their own years after the book was published. Try the game yourself: by looking up, say Iris Murdoch or Eleanor Gibson. Marjorie Grene
suggests (in her Descartes, 1985) that we have not yet apprehended the message (about perception) which the Gibsons were offering in the fifties and sixties.

After Personal Knowledge had been completed Marjorie Grene's influence continued to be strong, though intermittent. Her two greatest works - A Portrait of Aristotle and The Knower and the Known - appeared in the late sixties. In Polanyi's Knowing and Being which she edited, her influence is very evident. One wonders if the existential title was hers. In the thirty years that have followed Personal Knowledge it could be argued that Marjorie Grene has been the most productive explorer of Polanyi's wake and that 'her' biological stream was the main stream, after M.P. had more or less ceased navigating in the early seventies. Human Nature and Natural Knowledge offers, in good measure, all the expected Festschrift features: an impressive and complete bibliography, an outline of academic offices and honours and a splendid, true photograph. This volume is No. 89 in the Boston Studies in the Philosophy of Science. Marjorie Grene's own The Understanding of Nature was an earlier ornament to the series (No. 23). Both books are beautifully produced by Reidel.

In a brief but exemplary preface the editors salute her achievement: 
...far beyond [the historical studies] there is a central theme in Marjorie Grene's work that establishes her intellectual leadership.... This must be seen as philosophy of biology and philosophical anthropology and theory of knowledge.... And as one focus, there is the profound teaching of Michael Polanyi, her colleague and friend for many years, in Grene's relentless and persuasive critique of reductionism, whether in epistemology or in biology proper.... With Polanyi and against Aristotle, Grene places 'potency before actuality'. With Plessner, she develops the idea of the achievement of personhood in its ordered relation to "an artifact - the social world of culture".

The whole tribute is brief but worthy. It makes me wish there had been a fuller, scholarly "placing" of Marjorie Grene's work as a whole to balance the great range of exploratory themes which make up the book. These many forays, around the edges of the Grene pastures, are certainly juicy and are by a very distinguished group. Here are seven - (out of eighteen) which particularly impressed me:

Ian Hacking: The Invention of Split Personalities.
Alasdair MacIntyre: Positivism, Sociology and Practical Reasoning: Notes on Durkheim's Suicide.
Dorothy Frede: Heidegger and the Scandal of Philosophy.
Nancy Cartwright: Two kinds of Teleological Explanation.
George Gale: Anthropocentrism Reconsidered.
William C. Wimsatt: Form and Aggregativity.
Richard Rorty: Should Hume be Answered or Bypassed?

The Hacking and MacIntyre articles left me feeling a little light-hearted. They prise one out from one's cultural ruts. Cartwright and Gale
offer another kind of freedom, beyond the nuts. Perhaps we are about to escape the old adversarial stances, and our descendants may not be educated to put teleology against causation or imagination against logic. And perhaps they may come to see Man no longer as a clever 'knower' but as a 'known' by some greater mind. This thought was stirred by George Gale's Thesis about Human-ness being the essence of the universe. The theme has been magisterially elaborated in the much praised recent work by Barrow and Tipler, The Anthropic Cosmological Principle. In Gale's paper the idea is concentrated and discussed in eight pages.

Near the end of the book Richard Rorty takes his old Teacher on a gentle pas de deux. He tries to show her that the next dance won't be a biological spiral but a weaving in and out of the colonnades of history. I can almost hear his partner asking: "Why not both?"

I remember when Marjorie Grene came and taught at Abbotsholme for two weeks in the fifties - unpaid, just for the interest. The biology lab was tiny but there she spent most of her time, sorting specimens, talking about the early model of DNA (cardboard) which hung from the ceiling and embarrassing the regular incumbent with her awesome questions. One breakfast time she gave our teenage son a history of philosophy from Aristotle to Marx, with existentialism added, just slopping over into the washing up.

Marjorie Grene was/is a very great teacher.

R. Hodgkin

The Conversation That We Are


There is a common element to Polanyi, Kierkegaard and Wittgenstein. They are all concerned that, when it comes to our deepest searchings and most far-reaching actions, we have to escape from the 'epistemological solitude' of being - each one of us - a little self-centred something or other in the centre of a cerebral tangle. Polanyi attempts the escape by his revolutionary scientific paradigm that knowledge comes through commitment to (and the risk of being wrong in...) the deployment of our most universal hypotheses. The existential and phenomenological thinkers who followed in the wake of Kierkegaard were also trying to break away from Descartes' ego-centred vortex.

Both Polanyi and Wittgenstein make St. Augustine one of their starting points. Polanyi sees that Augustine created an action-impregnated belief system with faith as the pre-condition of knowledge (credo ut intelligam). Wittgenstein's debt to Augustine was more subtle. The Philosophical Investigations start from Augustine's interesting but quite inadequate
picture of an infant 'looking out' at the world through its senses. This, according to Fergus Kerr, is a foretaste of the dualism which came to dominate Western thought, especially after Descartes.

Fergus Kerr's book is a masterly tour of that long and convoluted boundary - that unique frontier which Wittgenstein early recognised as circumscribing each person's universe of what can be said in language; and they both recognise that the deep and important things lie beyond it ('Describe the aroma of coffee...? Do we lack words? And for what are words lacking?') Kerr helps to clear up many muddles about all this. One of them is the meaning of Wittgenstein's 'forms of life'. This phrase is not meant for a large scale universe of discourse such as religion or science. Rather, 'forms of life' stands for much smaller phenomena: all those bits of patterned behaviour or (so a Polanyi reader might have said) tacit knowledge manifesting itself in other than linguistic ways. Man is primarily a communicating and a ceremonial animal, and knowledge has its roots, not in abstract concepts, nor in brain patterns, nor in 'facts', but in the interpersonal thread in which we have all been spun and whose patterns we now weave. 'Forms of life' are the knots in the carpet and not the grand design. They are phrases, perhaps, in 'the conversation that we are' (Hölderlin).

Kerr is more direct than Wittgenstein in taking both people and their concepts to the cleaners. Oupitt is quickly mangled. Rahner is pressed hard. And D.H. Lawrence is allowed to give a final twist to Bertrand Russell:

What does Russell really want? He wants to keep his own established ego, his finite and ready-defined self intact, free from contact and connection.... That is what they all want...so that in their own souls they can be independent little gods, referred nowhere and to nothing, little mortal Absolutes, secure from question.

There is also a fascinating summary of Wittgenstein's contacts with Cambridge Marxists of the thirties.

Much of Kerr's book is an introduction to Philosophical Investigations and to other post-1930's writings. It is made quite clear that these are not to be seen as philosophically coherent theses but, rather, as spiritual exercises. They are to be pondered over, chewed poetically, reacted to, especially between the lines; they lie half way along, perhaps, from Zen koans to Ignatius Loyola. Michael Polanyi's 'head on' remarks in Personal Knowledge were not in this spirit. He probably never realised that Wittgenstein, in his idiosyncratic way, was doing the great anti-Cartesian, post-critical turn-about which Polanyi achieved in the forties and fifties.

The final chapters of the book - rounding up a lot of linked ideas - are especially interesting and full of memorable things: David Martin's son's remark that the churches are true because people in them like singing and walk about in patterns! or the quotation from St. Augustine on singing at harvest time or Kerr's own analysis of the origin of the idea of
'a cognitive subject' as an early Christian heresy and its continuation in the 'New Cartesianism' of the present day cognitive scientists.

I think that Kerr leaves us too much with the idea that the Holy Spirit couldn't get into anyone's head even if it tried. I think it could. I have long been a fan of Fergus Kerr's. This book confirms my prejudice.

Robin Hodgkin

LETTERS

We are re-printing a letter originally published in Tradition and Discovery vol. XIV which answers Drusilla Scott's article on 'Personal knowledge and sex education' (Convivium 22). Lady Scott has kindly let us have a copy of her reply, and this follows Verlyn Barker's letter.

Dear Editor:

Without presuming much about my own competence to comment on Drusilla Scott's article on "Personal Knowledge and Sex Education," published in the Polanyi Society Periodical, I do want to accept your invitation to make a response. I do so with considerable reservation because of the possibility of my not being sufficiently generous in supposing the meaning of some rather key ideas she sets forth.

One of those ideas is the role of tradition, the "indwelling of a tradition," a central point in the article. On the one hand, one certainly affirms the importance of tradition as the reality within which an individual in every culture dwells, lives, and grows. An individual does not exist apart from the tradition, but neither can the tradition be the totality within which one lives and grows. The roots from the tradition do not predetermine totally the formation of the body; other forces, strong and effective, also contribute to the formation. Tradition itself is of a given point, the culmination of cultural phenomena and thus has more of a dynamic than a static quality. The article seems to imply that there is something of a basic essential, germinal characteristic resident in a tradition. I wonder how far one can allow that assumption.

My comment places considerable weight on my own acknowledgement of the pluralistic nature of our culture; a breeding-in of qualities and values which do not rest easily together but rather remain in contention, even conflict. Within Scott's line of thinking, what is our tradition with regard to abortion? to homosexuality? to parenting? to the extended family? If I were to teach my children, if I were a parent, my traditions, how does this help the child deal with the other traditions equally (or more) powerful within our society? Or am I to conclude that the role of tradition is
that of serving as the construct against which the one I have taught must break in order to construct what he or she considers right and good? So, tradition must be handled carefully and be inclusive of the internal critiques which demonstrate the dynamic that dwells within a particular tradition. More helpful perhaps is attending to the diverse traditions within a given society that is pluralistic in nature and teaching how to think about those traditions as one works through to a responsible decision.

Much of what I have said about tradition applies also to the comment on apprenticeship to "persons in whom the learner places his confidence." In principle, yes. But a good teacher does not teach the student to mimic and ape, but rather shares experience and knowledge for the students own analysis and individualized use. To speak of "good mothering" leaves one with an awfully important question about the content of "good" and the values of the person who is defining "good". That is rather a key term, in this context, to be left begging.

With regard to sex education itself, certainly I resonate with the analysis of the impact of the so-called scientific "objective," "value-free" approach to sex education. Indeed this approach leaves one with the assumed value of the body as a machine and sex as a mechanical function of the machine - all of which is dreadfully non-human. Again I am left without much understanding of a rather central idea in the article - "the whole human meaning of sex," of "learning what it is to be a sexual being in the human mode." Although I think it is critically important to learn how a family is created and sustained, the human value and meaning of family, equally if not more important for me is understanding sex within the context of human sexuality - something I find missing in the article. To reduce sexuality to genital sex seems to me the great dis-service of our society and indeed leaves us with a focus on the reproductive system and contraceptive practice. To ignore the uniqueness of the sensuousness of touch and feeling and bodily closeness that is a part of the total sexual experience is to reduce sex only to its most animalistic characteristic. In this regard, I wonder if Scott doesn't fall victim to her own criticism of sex education.

One further comment, that about the family. As a single person, single all of my life, a natural question that I bring to any discussion about sex is whether or not human sexuality is understood broadly to view all persons as sexual beings. To speak of traditions, of family, of marriage, of the body, all appropriately belong in the discussion - as Margaret Mead's dwelling on "family structure" and a way of living that should use fully the best gifts of each sex, working in harmony together. But to ignore the realm of sexuality that is not related to procreation seems to me to leave an inexcusable void for both marrieds and unmarrieds. Viewing the article whole, one does wonder if tradition has not been viewed so narrowly as to eclipse the value of some good insights Scott had offered for discussion.

V.L. Barker
Dear Editor

I would like if I may to reply to Verlyn Barker's interesting criticism of my piece on Personal Knowledge and Sex Education. I would agree that my article was open to criticism; it was not fully enough worked out or integrated. But I find some of these criticisms hard to understand.

1. Tradition. Of course I was not saying that tradition totally determines us. And I thought my first paragraph would make clear that I was speaking of tradition as Polanyi has defined it; certainly not static, for the tradition and authority of a community dedicated to certain ideals makes genuine progress and originality possible. (see for instance Polanyi's 'Science, Faith and Society') The same applies to Verlyn Barker's criticism of what I said about apprenticeship. Of course the good teacher does not teach the pupil simply to mimic or ape. But an apprentice, or a child learning to speak, needs to begin by mimicking the teacher, to get the feel of what the teacher is doing. He will do this because he trusts that what the teacher is doing is meaningful. The teacher may well correct him at this stage if he does not mimic correctly, because until he understands, through doing it, what the teacher is doing, he cannot make it his own and develop it. The scientific community, Polanyi says, teaches conformity for the very purpose of encouraging nonconformity, and the same is true of other communities in varying degrees.

2. Barker thinks I should not speak of "good mothering" without defining what "good" means. On the contrary, it is impossible fully to specify what makes a good mother, for there are many ways of being a good mother. But good mothering can be recognised, just as we recognise a good carpenter or teacher or cook. No two good cooks will cook identically, but one can spot a good cook without any trouble.

3. Verlyn Barker questions what tradition can mean in a pluralistic culture and asks 'what is our tradition with regard to homosexuality? to abortion?'...etc. This is to take tradition at a much more cerebral level than I intended. The tradition I am thinking of is not something a parent could teach to a child, it is absorbed by the child from birth onwards, transmitted by the language, touch, expression, and voice inflections of the parents. One of the "sex education" booklets I have seen is entitled "Taught, not Caught" - stressing the fact that the writer disapproves of attitudes that the child simply "catches" or absorbs from his environment. The approved attitudes in his view are to be taught in a properly constructed, explicit programme. But I am arguing that the understanding that is caught goes much deeper, does not need to be so explicit, but grows like a seed and has the power and discrimination later to assimilate or to reject other views. If, that is to say, the nurturing environment has been good. In such a family environment a child learns by every nuance of speech and attitude of his parents to each other and to him, which he absorbs in an atmosphere of trust and love. So the essential for sex education is really to provide a supporting climate in which parents can rise to this...
challenge.

I quoted Gerald Heard in my article; I should like here to quote a few more sentences which were omitted before. Heard is speaking of the education parents give, which "is taken in...at a depth well below and more powerful than any rational perception or deduction.... Such educators (the parents) cannot be so raised and so kept in the right teaching state unless the community can give them the backing they need for their faith. They are the medium between the child and the community...what the parents have to supply to the child is not information or instruction but a climate of dynamic security...."

4. In the last paragraph I think Verlyn Barker accuses me of leaving out the central part of human sexuality; the "sensuousness of touch and feeling." Yes, I did leave that out, because I was not writing about sex but about sex education, and I believe that to attempt to teach sex is disastrous. This is illustrated by the story of a husband and wife who bought a book that was to help them to have better sex. The wife complained that her husband followed it so well, she could tell exactly when he got to the bottom of page two and started on page three. It was explicit, not tacit knowledge, and utterly destructive. I do believe that a child who grows up in a loving, caring and relaxed family, with the mixture of freedom and guidance which makes a good education, is likely to find his or her own way in human sexuality when the time comes, unless the community's tradition and beliefs have broken down to such an extent as to make this very difficult. In that case heaven help him or her, for instruction will not.

D. Scott.

FROM TRADITION AND DISCOVERY

Kenneth Shapiro: Bodily Reflected Modes.

"The body is our anchorage in a world." If, as Merleau-Ponty suggests, we exist through our bodies in the world, then every activity of the self and every aspect of the world is fundamentally connected with our bodies. In BODILY REFLECTIVE MODES: A PHENOMENOLOGICAL METHOD FOR PSYCHOLOGY ([Durham: Duke University Press, 1985], 230 pp., $30.00 hardback) Kenneth Joel Shapiro, a teacher of psychology at Bates College, has given us a provocative book on how we reflect on the psyche and the structure of what it is we know. Providing various concrete examples, such as looking at paintings, engaging in family therapy, writing a book, he concludes with a description of ambivalence. From his phenomenological perspective he seeks to show that reflection and structure are grounded in the lived body.

While Michael Polanyi refers to his own philosophy as "postcritical,"
the society of postcritical explorers extends beyond critical dualism. Merleau-Ponty, the admitted source of Shapiro's work, even though unaware of the work of Polanyi, is one of the foremost postcritical philosophers. Equally fruitful in many ways, Merleau-Ponty complements Polanyi's interest in scientific discovery and the tacit dimension with his concern for the body and version of Polanyi's explicit-tacit epistemology. For those embarked upon Polanyi's convivial dialogue, Shapiro's book is, therefore, both directly relevant, evident in similarities he notes between his phenomenological approach and Polanyi, and broadening, in drawing our attention to the psychological in postcritical perspective, about which Polanyi has little to say.

Taking up such a dialogue can be further useful in our struggle to emerge fully into a postcritical world. We all have been born in the "critical" world of Enlightenment and enter upon the brave new world of postcritical thought, not trailing clouds of glory but toting mortgages to the past. For all of Shapiro's commitment to a phenomenological perspective, there is in his book still some trace of residual Cartesianism. He has not fully appropriated Merleau-Ponty in three areas: the role of the personal in reflection, the non-objectivistic character of the known, and the concrete nature of embodiment. There is at the same time intimations of still greater significance for psychology in his postcritical phenomenology than he suggests.

I. Bodily Reflection

What is at stake in Shapiro's exploration of the nature of reflection is the non-dualistic affirmation that our lives are filled with tacit meaning which we live through our bodies and creatively shape in making it conscious. "Reflection" is the phenomenological method for making us aware of this. It attends to the known, whether of perception or thought, as a figure against a background, making us consciously aware not only of the figure which is focused upon but the background of which we are tacitly aware. Reflection is the way, then, that we become conscious of such subsidiary awareness of a background without focusing on it as an image or word. We are creatively involved in drawing out this figure from the background, of focusing on something while tacitly indwelling the context. This creative act he calls "forming," with which he intends to call attention to a figure when it is being formed rather than as a finished product that can become explicit image or word.

He gives as an example of reflection visiting an art museum and looking at a painting. As I look at it, I become engaged in it. Perhaps an orange patch catches my attention so I become preoccupied with it so all the rest of the painting becomes, he says, a "faded background" (Shapiro 1985, 32; further citation will be only to page number). But then another aspect can invite my attention so I shift to attend to it.

He calls this reflective experience a "two-story affair" and an "act
of abstraction." The orange splotch is a "point," "a part taken apart" (p 32), and "a mirrored flaked-off piece" from the "original" (p 37), that is, the total context or background. It is two-story because there are both patch and background. It is an abstractive act because "the orange patch appears above the original.... It is a part taken apart, taken away from.... [It] takes us out of the region of the perceived.... It is no longer part of the flesh of the perceived for it floats above it" (p 32). Yet the patch is not entirely disconnected, for it "refers" or "points to" (pp 123-4) the original context from which it has been abstracted.

Here are the first traces of Cartesianism. As Merleau-Ponty and Polanyi make clear, there is no figure drawn out from a background, no explicit focus based on a tacit grasp, without a person who is enacting it. There is, therefore, not only the figure and background but the person who shapes which is figure and which background. It would be more accurate to Shapiro's description and intention to call this, not a "two-story affair," but a "triadic" situation.

Neither, moreover, understands this act as abstractive but as concretely embodied. It is certainly selective, and this must be why Shapiro calls it an abstraction, that the orange patch is but one aspect of the whole which we select for our attention. While the patch is drawn out from the background, is it, however, "taken apart" and "away"? To say that it is no longer in the "region of the perceived," no longer "part of the flesh of the perceived," when it is what you are looking at, is to fail to describe accurately the actual experience of looking at one part of a painting and the integral relation between part and whole.

Isn't the act of seeing a figure against a background concrete rather than abstract? The OED defines "abstract" as withdrawn from matter and particulars. WEBSTER'S also defines "abstract" as separated from embodiment, impersonal, and detached, and "concrete" as that which grows together, makes actual, and involves immediate experience of realities. The orange patch is a particular bit of matter amidst other material particulars of the painting. What makes it different is our relation to it as we focus on it while depending on the rest of the painting as the background for our focusing. Indeed, what actualizes it as a specific particular is this act of focusing. The orange patch which we notice is still an organic part of the painting. Merleau-Ponty does speak of our "seeing" the background go behind a figure but does not speak of it as detached from its background, as floating above it. The known is not an abstraction from, but an emergent within, the context of the painting. By this I mean we do not only see the patch and not the painting, but rather we see the painting by noticing the patch, through the patch—that is, we see the patch explicitly and painting tacitly.

Only if the known is separated, abstracted, from its context, as Shapiro is doing, is it necessary to speak impersonally of the patch "pointing" or "referring" to the painting. The relationship of emergence
is integral: a figure is only a figure against its background, whereas an abstracted part can be what it is after being removed from whatever background it has come out of. If the known is an integral part of a triadic situation, it would not be accurate, moreover, to say the patch refers back to its original context, since things do not refer on their own; we make them, or take them, to refer.

As an emergent for Merleau-Ponty and Polanyi, the known is also not an objectivistic "point" but a "gestalt." Both thinkers draw upon Gestalt Psychology from earlier in our century and see the known, not as an atomic point, but as a pattern, a configuration of parts seen as a whole, that is itself a part or aspect of a larger whole, its background. As Polanyi would say, we indwell the whole of what is noticed, depending upon and tacitly integrating its parts into the whole we notice as the orange patch. Such a patch has shape and texture just the way a face contains the ingredients of eyes, nose, chin. When we recognize a face, we do not see a point but a pattern, a gestalt. Shapiro affirms our personal role in creatively shaping the world we know. Isn't configuring the known one element of this "coconstituting"?

II. Reflecting on Structure

Among the important issues Shapiro raises in his discussion of reflection is not only that there is a tacit background and that we are creatively involved in making something conscious from it, but how we become conscious of that which is not explicit. He says: "The touchstone for a phenomenological method must be a reflective posture through which I experience myself engaged in a particular phenomenon while I am looking at myself so experiencing." In fact he sees such a "description of this methodologically critical way of experiencing reflectively" (p 9) as the central contribution of his book.

The way he explains this is "that the structure of a particular phenomenon is present prereflectively, in the living of that phenomenon" (p 167). I coconstitute this structure by participating bodily in it. As a structure participated in prereflectively, it has a bodily presence, which is the "aftermath" (p 15) or "residue" of the lived moment in which I had participated. The first act of reflection, he says, is to abstract that bodily presence, to recover bodily that original embodiment (pp 167-8). This abstracted structure is not an image, word, or concept, but an explicit bodily presence, which can later become the basis for such articulation. The act of reflection then acts upon lived moments of the past, entering again into the original embodiment and abstracting a structure as bodily presence from it. He writes: "When I posit this bodily sense as an object, it appears as a way my body was affected in some prior engagement" (p 14). It is then, he says, a "virtual" or potential rather than "actual" enactment of the past moment.

A crucial issue here is whether structure tacitly known is the same as
that which is explicitly known. In an objectivist vein Shapiro does not recognize any change. Yet such change is fundamental to both Merleau-Ponty and Polanyi. The shift is from a relatively indeterminate to a relatively determinate reality. Perceptually the reality I am aware of in my periphery as I see something is fuzzy. If I turn and focus on what had been at the periphery, the phenomenon of my experience shifts from having been relatively indeterminate to being relatively determinate, to what we ordinarily call an object. So also for Polanyi, as for Merleau-Ponty, to shift my gaze from the face to the eyes is to make the eyes into a relatively determinate reality after they had been relatively indeterminate (See Poteat 1968). It is the mistake of Cartesian objectivism to believe the ingredients of a gestalt, such as eyes, or phenomena in the periphery were always objects, which I simply had not attended to yet, rather than recognizing that every known is actually a gestalt which I creatively shape as I draw it out. Nothing is a figure or "object" until I integrate it into its structural pattern, that is, until I (or we) see or think it.

Shapiro is especially helpful in clarifying the thought of Derrida and Lacan in contrast to his own. He shows that they believe that all meaning in experience is that of signifiers in a text. Meaning in the unconscious is thus a text of objective meaning. This rules out tacit meaning and our creative involvement in shaping conscious meaning. Over against this Shapiro argues that we participate in the original lived moment and coconstitute a tacit structure. But following this important postcritical affirmation, he relapses into objectivism: meaning is in no way altered as it is brought from tacit to explicit awareness. While Shapiro differs from Derrida and Lacan about the formation of meaning, they would seem to agree from that point on that a structure known in the background is unchanged when lifted ("abstracted") into consciousness. For Merleau-Ponty and Polanyi it changes significantly from being relatively indeterminate to relatively determinate. Making something explicit is itself a creative act that configures less formed realities.

It is because the structure is unmodified that Shapiro speaks of the meaning of speech as "referring" back to its implicit sense (p. 40). But Merleau-Ponty and Polanyi make it clear that the meaning of language as patterns of explicit meaning do not refer back to bodily or tacit meaning, but rather them within it. Just as the orange patch actually carries tacitly the bodily meaning of the rest of the painting in it, so also words carry our bodily sense. That is why Merleau-Ponty calls words articulate gestures.

Shapiro further exhibits objectivism in speaking of experience as a "system" (p. 12). While there are certainly structural aspects of our experience which we can articulate, the lived world is an ambiguous relatively formless context that can never be caught exhaustively in structural understanding? As Merleau-Ponty says: "experience of a world [is] not understood as a system of relations which wholly determine each event, but
as an open totality the synthesis of which is inexhaustible" (Merleau-Ponty 1962, p. 219). Correlative with this structural understanding of experience, Shapiro defines the criterion of adequate phenomenological description as precision. The criterion lies in "the power of each explicated structure to evoke that and only that feature and the degree to which those structures explicated together refer to this and only this phenomenon" (p. 19). Where explicit meaning is, however, in bearing, rather than referring back to, tacit meaning, and where that tacit meaning has a richness of connections for being relatively formless that the explicit structure does not show in being relatively determinate, the criterion of adequacy is more fruitfulness of further understanding than precision of correspondence.

The reflective act for Shapiro always works on a past lived moment. It is not clear how reflection as he understands it is different from embodied memory. Merleau-Ponty makes clear that the act of perception is not an act of memory, since you have to see or know a figure first before you can discern it has a relation to something in your past. His attempt to make us conscious of the functioning of backgrounds in our perceiving and knowing begins with an act of perception not an act of remembering an act of perception. He calls our attention to present tense experience because there the triadic character of a lived situation is actual. All too easily, a remembered figure appears as a deposit in our memory separable from both configuring self and its background. If it is seen as a figure against a background, the background, as well as the figure, is seen as an explicit phenomenon. Such an objectified context is no longer a lived background but a focal figure. Yet Shapiro insists that picking up such a remembered figure involves participating again in the background of the original lived moment. But this recapitulates the triadic structure in the act of memory: I participate in the present in the background of the past original lived moment and draw out the remembered figure. In this act of memory the lived background is the one I am living in the present as I grasp the remembered figure. Locating the known in the past does not relieve us of the difficulty of becoming aware of a lived background.

If I have objectified the previous background of the remembered object, to indwell both would require a different background from the one originally inhabited, in which I first grasped the remembered object in the earlier present. If we have objectified a previous background, we can never inhabit it again as it was, because making things into figures changes us and our context. In fact, regardless of whether we have configured an earlier background, we can never re-inhabit an identical background because that background is enriched by the first drawing forth of a figure, and letting it subside back into it, which has altered relations within it and in us to it. While there is continuity in our figuring and indwelling, our experience from moment to moment is genuinely temporal, that is, metamorphic.
Mereau-Ponty speaks of "re-achieving a direct and primitive contact with the world" by giving an account of aspects of "the world as we 'live' them" (Merleau-Ponty 1962, p. vii)—not as we have lived them. He goes on to say: "Reflection does not withdraw from the world towards the unity of consciousness as the world's basis; it steps back to watch the forms of transcendence fly up like sparks from a fire; it slackens the intentional threads which attach us to the world and thus brings them to our notice" (Merleau-Ponty 1962, p. xiii). Reflection for Merleau-Ponty is this act of stepping back to watch, this act of slackening the intentional threads in order to notice them. It is part of Shapiro's importance that he draws our attention to the question of how we can "watch" and "notice" figures forming from a background, from tacit meaning running through the background, connecting figure and background, and coursing through our being as we dwell within the world. Merleau-Ponty calls this "radical reflection" because it goes beneath the Cartesian categories of subject and object and catches them in the "act of forming" (Merleau-Ponty 1962, 219). While he does not for the most part talk about subject and object, Shapiro is saying that reflection catches a figure "when it is being formed" (p 121) beneath the objects of word and image. But Merleau-Ponty is going beneath any figure through the act of reflection—since you don't have a figure when it is forming, since it isn't a figure until it is formed—to the "I" in its fundamental temporality and to that "primordial layer" of the world as an "open totality" out of which "both things and ideas come into being" (Merleau-Ponty 1962, 219).

Now how is this done? Both Merleau-Ponty and Polanyi make it clear that to make something explicit is to change it from what it was when "known" tacitly or in the background. This means that to focus on the tacit dimension or background is to change it from what it is in our lived experience to an explicit figure. While Shapiro speaks of "looking at myself" as "I experience myself engaged in a particular phenomenon," we cannot in fact look at ourselves while we are looking at something else. Merleau-Ponty puts it this way: "My act of perception occupies me, and occupies me sufficiently for me to be unable, while I am actually perceiving the table, to perceive myself perceiving it" (Merleau-Ponty 1962, 238; his italics). Perhaps this is why Shapiro defines reflection as always dealing with a lived moment of the past, but that simply puts the problem at one remove because I still have to inhabit a background now as I remember a previous event or abstract a certain figure from it. To focus on the background of a past moment is to make it into a figure and thus is to lose its quality as background, just as to objectify my present background is to turn it into a figure, which I can only do by drawing it out of yet another tacit background that I indwell at present as I consider the first background made explicit.

What kind of knowing is it then that is involved in becoming conscious of explicit figure and tacit background? When attention is called to a
noise or colour in the background, we realize in focusing on it that we had already been aware of it even though we hadn't noticed it. Yet this is to realize what had been present in a previous moment even though not consciously known. Isn't there, however, a kind of awareness that is conscious and yet not focal? As I look at something, I can at the same time be aware of the periphery of my visual field. To do so I continue to gaze at what I had been focusing on but I lose the focus as I catch the fuzzy periphery out of the corner of my eye. It does not have the determinateness of an object, of what it would be were I to turn my gaze and focus on something there. So also in thinking, artistic creating, and relating to other people or creatures, we have a sense of a fullness of meaning beyond and surrounding our particular words and shapes which we strive to articulate, to give form to. As Shapiro reminds us, Polanyi says: "we know more than we can tell" (p 41).

At one point Polanyi speaks of this kind of awareness as "contemplation" (Polanyi 1958, 195-8). He writes: "A valid articulate framework may be a theory, or a mathematical discovery, or a symphony. Which ever it is, it will be used by dwelling in it, and this indwelling can be consciously experienced." This occurs through an act of "self-abandonment" and pouring oneself into frameworks themselves that seeks neither to observe nor to handle them, but to live in them." As observers "we are guided by experience and pass through experience without experiencing it in itself" (his italics). Our conceptual framework is as it were a "screen" that keeps us aloof from things. But "Contemplation dissolves the screen, stops our movement through experience and pours us straight into experience; we cease to handle things and become immersed in them. Contemplation has no ulterior intention or ulterior meaning; in it we cease to deal with things and become absorbed in the inherent quality of our experience, for its own sake." We can say then that there is a contemplative awareness that is conscious rather than tacit and yet which is not focal. Through this we can know (although as a sense not an object) the presence of the tacit background in the present. It is then through such a contemplative consciousness that we can step back to "see" the slackened intentional threads of tacit commitment that weave us into being. So where Shapiro sees reflection grasping an object beneath word and image as an abstraction from a past original lived moment, Merleau-Ponty and Polanyi, I am suggesting, see reflection or contemplation as non-focal yet conscious awareness of that out of which such objects emerge, that is, out of tacit backgrounds and the self's creative involvement in them.

This is of course not the only way that Merleau-Ponty and Polanyi seek to persuade us of backgrounds and tacit dimensions. They not only describe what is going on in acts of perception and knowing, appealing to our own present tense experience, they provide experimental data, argue by contrast (such as Merleau-Ponty's extended comparison of the brain damaged Schneider with normal behaviour), describe what is involved in a creative enter-
prise (such as Polanyi's description of scientific discovery), and show the limitations of the modern tradition since Descartes.

III. Ambivalence and Beyond

In conclusion to his book Shapiro gives an interesting psychological example of ambivalence to show how reflection operates. While focusing on one object, such as completing the writing of his book, he feels distracted by "the horizontal presence of an unposited ambivalent object" (p 195), which is his desire to spend time with his family. In ambivalence, he says, there is a pull between two objects, one posited, focused on, and the other not posited but on the horizon of consciousness, presumably unconscious. In contrast to the traditional view of ambivalence, that it is a "simultaneous attraction and repulsion from an object" (p 177), he says there are two objects which are pulling us in two directions.

On the basis of the criticisms raised above I would suggest that he is right to speak of a duality of pulls but not of both of them as objects. Rather, that which is on the horizon, because it is not yet posited, is not yet an object but the potential for becoming such, that is, for drawing our attention away from the object focused on to it. It is not yet an object, but as Maine gardeners say about their beans and corn before they appear, they want to come. The distracting pull is then the possibility of a pattern forming and emerging into explicitness. In his autobiography Jung gives such a good example of this early in his life when he felt the pressure to think certain thoughts about God in relation to the church in Zurich. He resisted because he sensed them to be unacceptable, yet he did not know what they were because they had not yet taken form. Only when he finally allowed the thoughts to come did they become objects or figures. Before that they were intentional threads running through part of the background of his living that wanted to come. Such experiences make it clear that a reality does not need to be an object in order to exert considerable power over us.

Apart from this criticism Shapiro's example of ambivalence has rich possibilities for understanding the psyche. At the very end of his book (pp 205-9), he sees the problem of ambivalence as one of integrity and suggests a way of alternating "living-in" each pole of the ambivalence. I can come to know each by trying each out. This sets up a dialectic which changes myself. He says: "When I leave a first camp to live in the second, I enter it in a different place than where I left it. In this sense I learn that my exploration of the first results in a change of site of the second." The other camp or pole or world is thus not set aside as simply possibilities not actualized but is in fact woven into the way I live predominantly, which enriches me. He speaks of this as a "spiral" which changes me, opening new possibilities not present originally. He writes: "While I must choose to live one world in actuality, the second is known in and through it.... Since its exploration as a possible world was part of
the way I came to know the world I chose, it is woven into the fabric of that present world." This strikes me as an immensely fruitful image which if drawn out further would exhibit greater significance of phenomenology for psychology. Isn't Shapiro here offering an image of the act of creativity, formation of self-identity, and the ongoing integrative acts of self-transformation that bears us forward in the process of personal maturation--borne by our body's anchorage in the world?

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