

Tradition & Discovery

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PREFACE

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This fall was the thirtieth anniversary of the Hungarian Revolution. Michael Polanyi saw in this event a demonstration that truth is an independent force. It led to his writing "The Message of the Hungarian Revolution." Remembering this important historical occasion, we are pleased to publish in this issue a reflection on the thought of Polanyi by Ruel Tyson who was with Polanyi in New York City when the Hungarian Revolution occurred. Tyson's article was originally given as part of a symposium at a plenary session of the annual meeting of the American Academy of Religion in New York. Other members of the symposium were Thomas Langford and myself. Polanyi and Marjorie Grene were able to attend the session because they were in New York working on plans for a conference on "The Foundations of Cultural Unity," sponsored by the Ford Foundation. William Potest, a prime mover in arranging this symposium and already working with Langford on Intellect and Hope, was also present. Durwood Foster, also on the AAR program earlier that day, responded from the audience about similarities of Polanyi and Tillich. Polanyi seemed delighted with the whole discussion and regarded it as a significant recognition of his thought in this field.

Taking this thirtieth anniversary of the Hungarian revolution as a reminder of Polanyi's passion for the pursuit of truth, we can observe the extent to which Polanyi's belief in the power of truth is continually vindicated. Revisionism has occurred throughout the Communist world. Positivist science is less upheld in philosophy. "Post-modernism" indicates the difficulties of living by the tenets of the modern outlook. While we are still in a transition from the critical philosophy of over three hundred years, there is clearly a persistent hunger for what Polanyi described as "a purpose bearing on eternity."

RG

SUBMISSIONS FOR PUBLICATION

Please send news and articles for publication. If you send news, be sure it is complete - date, author, source, etc. Articles should be within 10 SINGLE SPACED pages, 3/4 inch margins, 1" top and bottom margins. Put your name and affiliation under your title. Sending the article camera ready saves us from having to retype it.

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IN MEMORIAM

MAGDA POLANYI, 1901-1986

Michael Polanyi's widow died on February 17, 1986 in the Radcliffe Infirmary, Oxford, after a short illness. She is warmly remembered by the many followers of Michael Polanyi's thought who found her so generous and gracious during our visits at the Polanyi home. She was a strong supporter of the Polanyi Society, but she was also an accomplished textile chemist and a leader in voluntary services in the Oxford area. Devoted to Michael Polanyi's work, she was amused to learn that his fame had caused some well meaning librarian at the University of California in Berkeley to change the card catalogue of her dictionary of textiles from M. Polanyi to Michael Polanyi. George, her older son, died on July 15, 1975, and Michael on February 22, 1976. She is survived by Professor John C. Polanyi, a 1986 Nobel prize winner in chemistry, and two grandchildren, Margaret and Michael, born in 1961 and 1963 respectively. Keen in wit, direct and forthright in manner, and a lover of art, Magda Polanyi is a cherished and important part in the Polanyi story.

NEWS AND NOTES

John C. Polanyi, Nobel prize winner this year in chemistry, Professor at the University of Toronto, has become the literary executor of his father's papers and writings. He took on this responsibility at the request of Prof. T. F. Torrance who has been the literary executor for ten years. Professor Polanyi's address is 142 Collier St., Toronto M4W 1M3, Ontario, Canada.

Elizabeth Wallace, Ph.D., University of Kent at Canterbury on "Study of Thomas Hardy": D.H. Lawrence's 'Art-Speech' in the Light of Polanyi's Personal Knowledge" is organizing a special session on Polanyi and the study of literature for the 1987 Modern Language Association convention in San Francisco, Dec. 27-30. Interested persons should contact her: 1880 Whitcomb Ct., Salem, OR 97304 or call her at (503) 581-1555. The deadline for proposals is March 15, 1987.

Criticism and Tradition:

The Social Thought of Michael Polanyi

American Academy of Religion, New York City

December 31, 1964

Ruel W. Tyson

Eight years ago this week I first met Professor Polanyi in this city. About him I knew but his name, that wonderful combination of those crisp syllables, and one phrase I had seen quoted, a mysterious phrase, especially when its author was surprisingly identified as a physical chemist. The phrase was "fiduciary foundations." I do not recall if we talked explicitly about this key term in his thought, but I do remember that we sat in a place from which we could see through the December haze the reflection of the western sun on the UN buildings.

The paradigmatic importance of the Hungarian Revolution was soon much on his mind. Michael Polanyi read to me quotations from Hungarian intellectuals, writers, and poets who vowed never again to tell lies for public expediency. "The best communist writers have resolved, after many difficulties, serious errors and bitter mental struggles, that in no circumstances will they ever write lies again." This was basis for remorse of all these writers, communists and non-communists, and for an emerging sense of civility.

This, Polanyi described as the "recoil of morally inverted men," sketching his theory of moral inversion on the table napkin. The reaffirmation of truth, transcending party lines, national boundaries and local circumstances, was a renewed expression of a fateful moment, of the autonomy of the "intellectual passions," the eros for truth and the celebration of originality which makes discoveries possible. In other terms, these declarations were understood by Polanyi as a call for independence of thought, and its cultivation for a worthy end coupled with a passionate intention to renew the deflected ideals of social improvement and moral progress.

These declarations were seen as a return to the program of the Enlightenment. The recoil from moral inversion, which had

previously characterized life in these societies, sought to re-stabilize itself by restoring the aspirations of the Enlightenment, which, according to Professor Polanyi, first explosively appeared on the public scene in the irruptions of events we collectively term the French Revolution; a revolution, which Burke, Paine and Hegel agreed was decisive for the modern era.

However, Polanyi saw the return to the ideals of the Enlightenment paradigmatically portrayed in the Hungarian and Polish revolutions as basically unstable and fated to repeat past errors which led to moral inversion; in short, the Rationalist Enlightenment is in need of revision, even as its reappearance is an occasion for hope.

Much of the social thought of Michael Polanyi, including his statements that our social balance must be regained "primarily on secular grounds," may be seen as a revisionist program, a revision of the rationalist Enlightenment based on "the example of science," specifically on his vindication of the indispensable role of "tacit knowledge which limits the destructive possibilities of undisciplined critical thought." One important mode of tacit knowledge is tradition which is not transferable in explicit, formalized terms. Polanyi, then, is a dissenter from the Weberian secularization, or in Weber's terms, "the disenchantment of the world."

The critical thought of the Enlightenment, combined with the social dynamism of the French Revolution, produced unprecedented discoveries of great worth as well as political and personal tragedies of great horror. Unless the passionate pursuit of critical thought, energized by scepticism, can be re-established in a framework which will discipline its evident potentialities for excess, what appears as a recoil from those very excesses may prove to be but a prelude to another era of unspeakable consequences. "Revision is needed," Polanyi writes, "because you cannot base social wisdom on political delusion." Others will translate "delusion" as political utopianism. The present situation offers opportunity for consolidation of free societies, not only in practice, but also in consistently held principles.

For instance: by foregoing loose talk about "open societies" and "closed societies"; by acknowledging that a free society is not open, without rootage in its past, its beliefs and its procedures; instead a free society is dedicated to a distinctive set of beliefs and to forms of rationality which demand the recognition of the tacit component of commitment to the ideals and procedures of that society by all its students and critics.

Kant's dictum in his essay, "Dare to know," conflicts with the continuity of the generations as taught by Edmund Burke with

his view of society as a contract and his veneration of precedent. Kant's "Dare to know" corresponds to Polanyi's intellectual passions, especially the heuristic passion to "look at the unknown." Burke's continuity of the generations, his conviction that political knowledge takes the form of "rules of art" which can only be transmitted by precedent, by examples of the practices which embody these rules, corresponds to Polanyi's dictum, with specific reference to science and to art, "To learn an art by the example of its practice is to accept an artistic or scientific tradition and become a representative of it." This is the necessary precondition for discovery.

Possibilities of significant discovery demand tacit acceptance and subsidiary awareness of existing and accredited interpretative frameworks. Subsequent feats of originality modify these frameworks and set the conditions for subsequent discoveries. Future innovators must first apprentice themselves to authoritative masters. Acknowledgement of existing theories and procedures is a fiduciary act. Polanyi has used at least three overlapping notions to indicate the sort of discipline within which original discoveries are made: "fiduciary framework," "acceptance of calling" and "dwelling in and breaking out." Perhaps this last set of terms portrays sufficiently the dialectical tension between dwelling in -- acceptance of current disciplinary idioms and theories -- and breaking out -- with the novelty of discovery which dissents from the previously endorsed and accepted discipline of interpretative frameworks.

Two sorts of discipline are present in Polanyi's theory of discovery. First, the discipline of operating from the determinate but flexible interpretative framework, whose modification often requires advocacy and controversy. Second, the application of originality to the indeterminate problem such that the consequent discovery will be universally transferrable, public and repeatable. Acceptance of a received framework in which we dwell is presumed by that intellectual passion which craves for mental dissatisfaction, the erotic-intellectual drive to break out of those forms which both restrain the mind and set new problems to be solved. The resultant originality is the highest possible self-determination of the mind. [1]

Polanyi writes in History and Hope:

1. The mind's desire for ever increasing contact with reality reveals an indebtedness to Platonic metaphysics, while Polanyi's stress on freedom of the individual to accept the context of his or her calling dissents from the Platonic imperium. Socrates' death is possible within Polanyi's conception of the relation between politics and knowledge.

"For the vision of the problem, the obsession with it, and the final leap of the mind which arrives at discovery, are filled from the beginning to end with an urge towards its external objective. In these intensely personal acts there is no trace of self-indulgence; for they all express the conviction that there is something there that must be discovered. Originality is dictated at every stage by a compelling sense of responsibility for advancing the possible growth of truth...."

[2]

This responsibility for growth of thought is extended into the civic domain. The civic co-efficients of thought are institutions of culture. Burke had claimed that there were "no new discoveries to be made." Traditionalism had become static. If Kant's "Daring to know" at such great cost was corrected by Burke's vision of the partnership of science, art and civic virtue across the generations, Polanyi corrects both Kant and Burke by combining elements of Enlightenment rationalism and Christian traditionalism by revising both. Scientist and citizen both serve as traditional authority, but an authority which is dynamic. The continued existence of these consensual authorities depends on their constant self-renewal through the originality of their practitioners and constituents. Enforcement of discipline

2. History and Hope, ed. by H. A. Jelenski. London, Routledge and Kegan Paul, 1962. pp. 17-36; 185-196.

and inducement to dissent is Polanyi's summary formulation. [3]

The dialectic between authority and self-determination; between discipline and originality; between tacit tradition and explicit discovery is caught in Polanyi's metaphor of "the republic of science" as "a society of explorers" which he extends to the political and economic domains as well. Such a society, affirming its calling and accepting its fiduciary commitments, strives toward an unknown future. In the case of scientists, the explorers strive towards a hidden reality, for the sake of intellectual satisfaction. The scientist as citizen supports and corrects those institutions in his society which make explorations in science, art, and morality possible.

Polanyi's social thought is mid-way between his epistemology and his ontology: to be on this threshold it is necessary to revolve in both of these directions, and to engage in each of these adjacent inquiries. I have attempted to give an exposition of one aspect of the rich and continuously unfolding thought of Michael Polanyi with some measure of apostrophe of that thought. I hope I have done so without inordinate apostasy.

3. The dynamic between tradition and dissent, criticism and tradition, in Polanyi contrasts sharply from the views of Michael Dakeshott with whom he might otherwise be linked: "Consistency requires him(Dakeshott) to carry this denial of the novelty of all speculative thought into the field in which it would seem least tenable, the field of scientific enquiry. His account of the formation of scientific hypotheses differs. . .from that of Polanyi. The latter would agree 'that only a man who is already a scientist can formulate a scientific hypothesis,' but he would not agree that a hypothesis is a dependent supposition which arises as an abstraction from within already existing scientific activity' of 'traditions of scientific enquiry.' (Dakeshott, Political Education, 14-15; italics added) With each path-breaking hypothesis in the development of science something fundamentally new appeared, something demonstrably underivable from previous scientific information, something which could have only sprung up, miraculously, in the mind of a previous scientific activity had, at this point, failed. The state of mind of a man in the process of discovery (as described by Poincare and Polanyi) is not backward-looking at all. He feels himself to be engaged in a highly personal search for an objective reality which his predecessors have left hidden," Watkins, J.W.N. "Political Tradition and Political Theory: An examination of Professor Dakeshott's Political Philosophy," The Philosophical Quarterly, II(1952), pp. 334-335.

Compound and Complex Entities: Polanyi's Principle of Marginal Control and Its Application in Ethics

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I

One of the interesting aspects of Polanyi's philosophical work is the way in which his ideas often illumine philosophical discussions in the writings of other thinkers working more or less within the context of a given school. These reflections use Polanyi to clarify a point recently treated in writings of Peter French, a philosopher interested in ethical questions who works primarily within the Anglo American philosophical tradition. French and others in Anglo American philosophical ethics have recognized and addressed a good philosophical problem, a problem which theological and philosophical ethicists not comfortable with Anglo American approaches must also face: those who hope to speak about the moral responsibilities of social entities such as business corporations must develop a rich and discriminating philosophical vocabulary adequate to describe the nature of such entities and their action. Below I discuss the metaphysically oriented approach French has taken to argue social entities such as corporations are moral agents. I cannot here outline his complex argument in any detail, but I shall focus on how Polanyi's principle of marginal control can helpfully supplement the interesting type of analysis French offers. In the broadest sense, these reflections are interested not simply in French's work but in the application of Polanyi's epistemological perspectives in social ethics. I begin with additional comments on French and his general approach in ethics.

II

Peter French would likely approve of F.H. Bradley's claim that "ethical theories rest in the end on preconceptions metaphysical and psychological." French has approached questions about the moral responsibilities of social entities such as business corporations by asking about the metaphysical status of such entities. At the outset, it is important to emphasize, however, that the metaphysical claims which French has put forth about such entities should not be misconstrued as an effort broadly to reify such entities, as some of his interpreters have suggested.

French's metaphysical interest in social entities is visible in his early analysis of collectivities.³ In the next section, I briefly review his distinctions among types of collectivities. French's general approach to questions about the metaphysical status and moral responsibilities of social entities is an approach focusing upon the nature of agency and intentionality. Much of his writing has centered upon philosophical problems in understanding what we mean by "moral person", "moral agency", "intentionality" and "moral responsibility"; he often appeals to ordinary language use in sorting out such matters. French argues that collectives of one type which includes business

corporations qualify as "moral persons," but what he means by this is quite circumscribed: "person," French contends, is not a natural kind term but refers to a class broader than human beings. French summarizes the conditions for moral personhood as follows:

. . . being an agent is a necessary and sufficient condition of being, for moral purposes, a person, a citizen of the moral world. As we have now seen, that claim is to be regarded as equivalent to the claim that one is accountable for what one did if and only if one did it intentionally. To act intentionally is to do something for a reason, that is because of a desire and a belief.⁵

In claiming that corporations qualify as "moral persons," French thus is arguing that corporations can legitimately be regarded as agents capable of intentional action; such entities can be said to act on the basis of reasons, beliefs and desires. Since this is the case, French holds that corporations are the proper subject of ascriptions of praise or blame.

In his early writing, French's analysis of responsibility, as far as corporate "moral persons" are concerned, is strictly limited to a claim about the legitimacy of ascriptions of praise and blame. This very modest claim, I shall suggest in the last section of this essay, needs to be enriched. Although I find the seeds for a richer discussion in French's argument, I concur with Jere Surber's conclusion that the confined agency approach French has employed in his early writing is problematic.⁶

It is of significance that French himself has sensed the limitations of and gone beyond, in his recent writing, his early conception of responsibility. His recent work shifts in the direction of what Surber has termed an approach to ethics through responsibility (as opposed to an approach through agency, an approach popular among Anglo American ethicists). French commented as follows on Surber's excellent recent analysis and critique of his early writing: "He correctly notes that I tried to force the concept of agency to its limits and that I found it still only partially incorporated the complexities of the ordinary notion of moral accountability."⁶ Later in the same piece, French suggests that perhaps Surber is correct: the concept of responsibility should be of primary interest in ethics and this means that notions of intentionality must be frayed in terms of a conception of responsibility rather than vice versa. These acknowledgements, I believe, imply a shift in French's thought toward perspectives more congenial with Polanyi's thought than are most approaches of Anglo American ethicists.

In sum, French concludes the corporate "moral person" is the proper subject of ascriptions of praise and blame; his metaphysical analysis used to argue for this conclusion is, in my view, of more significance than his conclusion, although his understanding of agency also needs modification. I shall, in my concluding section, make a few brief suggestions about the broader parameters of corporate agency and responsibility. Chiefly, I want here to show that French's contention that corporations can be said to act on the basis of reasons, beliefs and/or desires is a claim which can be defended with Polanyi's principle

of marginal control. To an explanation of this point I turn in the next section.

III

French proposes that ethical thinking about the responsibilities of social entities is at a crossroad: it will remain in a muddle subject to the temptation reductionistically to consider the action of any such entity as only that of a collection of individual human moral agents unless clear distinctions can be drawn between types of human collectivities. French argues there are three substantially different types of collectivities: aggregate collectivities, statistical collectivities and conglomerates. An aggregate collectivity is an entity which consists of the sum of the identities of its membership¹⁰. Both a crowd and a mob are aggregate collectivities. A crowd gathered at a sporting event, for example, is no more than a collection of the spectators. A crowd or mob is a "random collection" which Virginia Held defines as "an unorganized group of persons who happen to find themselves together by the accidents of history."¹¹ But not all aggregate collectivities are random collectivities. According to French, in addition to aggregates composed by spatial and temporal continuity, there are aggregates defined by a common feature:

Yet it would seem correct to say that generally anyone uttering a sentence of the sort, 'White American racists are to blame for the plight of the minorities,' intends to blame each and every white American racist by his utterance. In effect, an aggregate collectivity of this sort is defined by the very features or characteristics by virtue of which blame is ascribed to it. For this reason, however, such an aggregate collectivity is not in the normal sense 'random.'¹²

For purposes of clarity, an aggregate defined by a common feature might be termed a "phenomenal aggregate." According to Heidegger's etymology, the Greek verb from which "phenomenon" comes means "to show itself."¹³ Hence a "phenomenal aggregate" is that which shows itself in common.

Ordinary language usage suggests another type of aggregate akin to the phenomenal aggregate:

Consider the statement 'The American people have the highest standard of living in the world,' which certainly does not mean that each and every American has the highest standard of living in the world. Also the statement 'The American people grew tired of hearing about the Vietnamese war' may be true when the statement 'American John Doe grew tired of hearing about the Vietnamese war' is false. These entailments do not hold because in this use the collective noun or noun phrase refers to a statistical collectivity.¹⁴

A statistical collectivity, as far as predication goes, seems to be a hyperbolic phenomenal aggregate.

The third, and most important for purposes here, type of

collectivity identified by French is the "conglomerate collectivity"¹⁵ which he defines in terms of the nature of its identity vis a vis the identities of its membership:

I shall call C a conglomerate collectivity if the identity of C does not entirely consist in (is not exhausted by) the identities of its membership. The existence of a conglomerate collectivity is compatible with a varying or constantly changing membership. A change in C's membership does not entail a corresponding change in the identity of C.¹⁶

Generally, it is the case that predications about the action of some particular aggregate or statistical collectivity entail that the actions predicated of the collectivity are predicable of some (and, in the case of phenomenal aggregates, every) member of the collectivity. "The crowd was unruly" entails that the "unruliness" predicated of the collectivity is predicable of a least some members of the crowd. But this is not the case with conglomerates:

. . . that which is predicable of C (a conglomerate collectivity) is not necessarily predicable of all of C's membership or of any of C's membership, and this is also true of predications of blame. Only in rare instances of use does the name of a conglomerate collectivity refer to a determinate set of individuals. Hence "The army sold its holding on Padre Island" does not entail that "some members of the army sold property on Padre Island."¹⁷

French's example makes clear that the army as a collectivity is not the sort of entity whose identity is of the same sort as that of members of the army. Of course, some members of the army may sell property for the army but this is a different matter. In fact it is necessary, in order for the army to sell property, that some members act (negotiate) on behalf of the conglomerate. A conglomerate is an entity which, in Polanyi's terms, we recognize because of comprehensive features; such features extend beyond the features by which we recognize what we may identify as its members. A conglomerate is thus not merely a determinate set. It is a kind of collectivity I prefer to call a complex entity and is fundamentally different than random or phenomenal aggregates or statistical collectivities which can be termed compound entities.

A further example, highlights the differences between compound and complex entities and illumines French's claim that conglomerate collectivities, unlike aggregates, are compatible with varying membership. Let us say that Gulf Oil joins a uranium cartel and this violates U.S. antitrust law which brings the Justice Department to file suit.¹⁸ Gulf as a corporate entity cannot, intuition rightly tells us, offer to the court or the public a "not-the-same-person" defense. Such a plea argues that the corporation is not the same entity it was when it joined the cartel because one or more Gulf employees who were with the company when the decision was made no longer work for Gulf. Changes in personnel, no matter how important they might be in the Gulf organization, are incidental to Gulf's identity. Gulf is, in all significant senses, the same entity when joining the cartel as on its day

in court. Gulf, in other words, has a significant feature by which we recognize it as an entity which is different than the features by which we recognize or identify the members of Gulf. This feature is the formally articulated decision-making process which is spelled out in an organizational chart delineating responsibilities and in the body of policy of the organization.¹⁹

Policy specifies both how decision procedures should work and the outcomes of the previously operative decision procedures which are to serve to guide present and future decisions. The organizational chart specifies roles or functions and the relationships among such functions. It is the integration of the body of policy and the specification of role relationships which constitutes the formal decision-making process. The decision-making process as a feature of Gulf Oil is most aptly described as the principle of organization or control established within boundaries left open by principles constituting or controlling individual human beings as social and biological individuals. Insofar as such a principle of marginal control is a recognizable feature²⁰ of a collectivity, it is a complex entity rather than a compound entity.

The significant differences in the nature of membership in aggregate and conglomerate collectivities are functions of the level of organization in conglomerates; such organization is a part of the formal decision-making process. Members of Gulf understand themselves as and are recognized as role players. Gulf is embodied in its many authentically different roles and exists as a real entity in the integration of such roles.

The thrust of the argument which has unfolded piecemeal above may be summarized in the following way: what French terms a conglomerate is an entity with an operative level of control functioning within boundaries left open by principles controlling or constituting individual human beings. Such a principle of marginal control is a comprehensive feature by which we recognize and identify conglomerates. It may be referred to with the summary term "decision-making process" and can be depicted as the method by which individual human members of a conglomerate act as a group. The decision-making process alone, of course, does not "act;" but individuals who willingly assume certain roles or functions as set forth in that process do act. They may be said to act for the conglomerate. Insofar as they assume certain roles, their identities as human agents are extended or given further shape. There are, of course, all sorts of dilemmas which such individuals as agents with moral sensibilities shaped largely outside the organizational context face as they try to reconcile values embedded in their everyday characters and social visions with the entailments of their extended identities as task-specific agents for a conglomerate.²¹

IV

What significance should be attributed to French's typology which I have elaborated, using Polanyi's framework, as a general distinction between complex and compound entities? This question is an important one which I shall approach indirectly in order to say more about both French's perspective and Polanyi's principle of marginal control.

French argues collectivities of the sort I have termed complex entities qualify as moral persons. Moral agency is a necessary and sufficient condition for being a moral person. Claims for moral agency depend upon the possibility of describing an event as an intentional action, an action done because of reasons, desires and/or beliefs. Much of French's discussion of moral agency and personhood is focused at the level of language. As far as descriptions of events are concerned, "layers of nonintersubstitutable true descriptions" are possible: "Often a single event can be correctly described in a number of different and nonequivalent ways."²² Claims for the status of moral agent and moral person rest on the possibility of true act descriptions attributing intentionality:

The important point is that metaphysical personhood depends on the possibility of describing an event as an intentional action At every layer at which it is proper to describe an event ²³ as an intentional action, there is a metaphysical person.²³

French's argument at this point does not truly provide help in identifying members of the class of moral agents. Legitimate moral agency and personhood depend not on whether descriptions attributing intentionality are possible but on whether such possible descriptions are true. French apparently believes that questions about the truth of descriptions attributing intentionality can be settled. He holds that the truth of descriptions attributing intentionality is a matter of verifiable generalizations: ". . . intentional agency is the conceptual nexus elucidated by a set of empirical generalizations that define the sameness relation to a suitable exemplar that determines the class of things that are persons"²⁴

The commonsensical germ which seems hidden within French's approach has two parts: (1) human beings are suitable exemplars for intentional action and (2) some other entities seem to function enough like human beings in relevant ways to be included in the class of intentional actors. French's appeal to a set of empirical generalizations (defining a sameness relation to an exemplar) implies that he assumes or hopes that it is possible explicitly to enumerate (1) what constitutes the relevant characteristics of seemingly similar non human entities and, ultimately, (2) what belongs in the class of intentional actors and what does not. Polanyi's treatment of class terms suggests, alternatively, that it is not possible to specify explicitly every member of a class. The theory of tacit knowing points out that the application of class terms is a tacit skill. French's dubious claims for empirical generalizations belie his formalistic predisposition. Yet his intuition about the appropriateness of including conglomerates in the class of intentional actors seems correct. The curious, circuitous argument (sketched above) focusing on linguistic descriptions of action which he takes to be a key to claims for moral agency is misleading; it ultimately, however, does suggest that French appreciates how the organizational structure of conglomerates differs from that of aggregates and that this has important bearing upon why it seems appropriate to speak of conglomerates as intentional agents. French's discussion can be sharply focused by

applying the conceptual vocabulary Polanyi used to analyze the ontological structure of comprehensive entities. At the least, the Polyanian approach used in the previous section to develop the basic distinction between aggregates and conglomerates helps identify logical elements of conglomerate action.

In Polyanian terms, a conglomerate or complex entity is structurally analogous to a comprehensive entity, a whole that is an integration of subsidiaries. Structurally, an aggregate is not an integration of its elements but a summation of them. To understand the functioning of a complex entity requires understanding the levels of control in the entity and the relation between such levels. The formal decision-making process in a complex entity must be recognized, in Polanyi's terms, as a "higher level of control."²⁵ This higher level contains the foundational operational principles, the "rules of rightness", ²⁶ of the entity; it defines the conditions for the success of the entity. To recognize a complex entity as an entity with operating principles orchestrating subsidiaries includes a recognition of the purposive and active potentials of the entity qua entity. In Polanyi's terms, the "molar function of the individual is not specifiable in 'molecular' terms."²⁷

French does not employ Polanyi's principle of marginal control to elucidate the full implications of the distinction between types of collectivities; he does, however, appreciate the practical implications of this application of Polanyi's principle. French sees that the structure of complex entities makes necessary a level sensitive discourse about the action of conglomerates. He rejects the prevalent tendency to reduce consideration of issues of responsibility for complex entities to matters of legal liability and individual moral responsibility.

If a complex entity is a moral agent or moral person, its action cannot be reductionistically considered in terms of only the reasons informing the individual moral actions of its human subsidiaries. A given action of an individual human agent acting as a subsidiary or conglomerate role player must be first assessed in terms of congruence with intentions at the molar level. Action which legitimately flows from conglomerate intentions has as its warrant the proper functioning of the decision-making process; actions that are conglomerate intentional are sanctioned. Assessments of intentionality are not, however, limited to the higher level of functioning in a complex entity. An action which is consistent with the decision procedure of a complex entity may also be described in terms of the intentionality of the individual human being carrying it out. Individual human intentions may be different than corporate intentions taken up as an agent functioning for a conglomerate. In sum, to recognize a social form as a complex entity, entails recognizing that there can be intentions appropriately lodged at the level of the whole; descriptions of such intentions may co-exist with descriptions of individual human intentions for the same act.

An example vivifies this abstract description and shows its importance. Let us say John Smith sells land for Corporation X after he has been authorized to do so by his superiors in the corporation. Smith's actions, since they are consistent with and in fact carry out a corporate decision, are corporate intentional acts. Smith's action can

also legitimately be described in terms of his individual personal motives. He perhaps is personally eager to get another job or a promotion and wants to be able to add to his resume that he successfully negotiated such a land sale. The two different levels of action description are clear here. Let us add two alternative wrinkles to the example. In one case let us assume that Corporation X decides to sell the land recognizing that it is contaminated with deadly Dioxin. In another case let us say Smith selects a particular buyer because he is to receive a kickback. In the first alternative it is possible to speak of blameworthy corporate intentions. Such intentions are assessable quite apart from Smith's intentions (although the plot thickens if Smith too knows the land is contaminated). In the second alternative while Smith's personal intentions might be deemed blameworthy, such a judgment might not necessarily apply to the level of corporate intentions.

Matters, of course, are not so easily separable as my simplified examples imply. The examples do suggest the layered complexity of discourse about the action of conglomerates. French's general agency approach to organizational action helpfully focuses attention on the different levels at which action must be described and evaluated. Such an approach, which I have recast in terms of Polanyi's principle of marginal control, points out the fallacy of describing action at the molar level only in molecular terms.

Perhaps because French's discussion of moral agency is so preoccupied with questions about the possible descriptions of action, he does not explore some of the more fruitful possibilities which are implicit in his basic approach to intentionality. To conclude, I very sketchily outline some modifications of French's position which draw upon the broader framework of Polanyi's thought. French links intentionality with reasons, beliefs and desires. To speak of reasons, beliefs and desires already presupposes a centered subject. What seem to be unique about the centered subjects which we term intentional forms or entities is that they have sophisticated symbol manipulating capacities. The functioning of sophisticated symbol manipulating forms is best understood as a response to environment. But such forms do not merely adjust, in a purely mechanical sense, to environmental change. The response of symbol users is mediated through the layer of symbolic control. Put more simply, such forms are interpreters of the environment in the strong rather than the weak sense. Symbol manipulators as centered subjects face ambiguity. The class of intentional agents includes forms or entities who are respondents that entertain options for reaction. A conclusion something like this is implicit in (or but a short step from) French's claim that true act descriptions attributing reasons, beliefs and desires are the mark of intentional agents.

Following out this kind of conclusion leads in directions French, in his early work, was quite hesitant to pursue; these directions are in fact much closer to suggestions made by Jere Surber's critique of French. Surber suggests that the agency approach used by French leads to an impoverished notion of responsibility since French concludes only that a "moral person" is the proper subject of ascriptions of praise and blame. Matters of moral responsibility seem to be no more than after the fact judgments about the appropriateness of action; the prescriptive

dimensions of moral discourse essentially have no place within French's approach to moral discourse. Surber concludes that it is necessary for notions about the nature of responsibility to shape our notions of agency rather than vice versa; French's attempt to "derive" moral personhood and the nature of moral responsibility) from the metaphysical structure of agency bears inadequate fruit. If, however, French's model of agency is extended to include conclusions (like those sketched above) about the symbol manipulating powers of intentional agents, the force of this criticism is modified. Since symbols are social, symbol manipulators are socially shaped entities, whether they are human beings or conglomerates. As interpreting respondents reacting to changes in environment, symbol users recognize and respond to socially objectivated meanings and norms for behavior. This in fact seems roughly what it means to say the action of intentional agents is rooted in reasons, beliefs and desires. Complex entities are intentional agents entities with reasons, beliefs and desires because they are symbol using interpreters: in the case of conglomerates, their human subsidiaries, operating in the context of the decision process and the framework of policy, provide a top level of control with interpretative capacities. If this conclusion is correct, the thinness of an analysis of agency and responsibility which focuses only on issues of sanction at the molar and molecular levels (French's argument in Polanyian terms) becomes apparent. As Surber implies, the broader nature of conglomerate agency and responsibility must be approached in terms of historical, social dynamics. Questions about the responsibility of social entities must attend chiefly to the quality of the formal decision-making process (the molar level) as a discriminating (i.e., interpreting) device assessing the texture of relations²⁸ existing between the complex entity and other agents in the environment.

Notes

¹F. H. Bradley, "Author's Preface To The First Edition", Ethical Studies (London: Oxford University Press, 2nd ed., 1970), viii.

²Peter French, "Commentary", Business and Professional Ethics Journal (vol. 2, no. 4, Summer 1983), p. 90. In this response to Jere Surber's analysis of his work, French compliments Surber's understanding but blasts Thomas Donaldson's earlier reaction to his position in Corporations and Morality (Englewood Cliffs: Prentice Hall, Inc., 1982):

Unlike, especially Donaldson, Surber recognizes that my metaphysical arguments imply "no more than that corporations are as much the appropriate subjects of moral responsibility as are human beings who meet" the criteria of agency. I do not hypostatize corporations as supra-individual entities, nor do I make anything like the absurd claims about rights that Donaldson wants to ascribe to me or derive from my position (p. 90).

³Peter French, "Types of Collectivities and Blame", The Personalist (vol. 56, Spring 1975), pp. 160-169. A later article which focuses exclusively upon the distinction between aggregates and conglomerates is "Crowds and Corporations", American Philosophical Quarterly (vol. 19, no. 3, July, 1982), pp. 271-277. The opening two chapters in French's recent

dimensions of moral discourse essentially have no place within French's approach to moral discourse. Surber concludes that it is necessary for notions about the nature of responsibility to shape our notions of agency rather than vice versa; French's attempt to "derive" moral personhood and the nature of moral responsibility from the metaphysical structure of agency bears inadequate fruit. If, however, French's model of agency is extended to include conclusions (like those sketched above) about the symbol manipulating powers of intentional agents, the force of this criticism is modified. Since symbols are social, symbol manipulators are socially shaped entities, whether they are human beings or conglomerates. As interpreting respondents reacting to changes in environment, symbol users recognize and respond to socially objectivated meanings and norms for behavior. This in fact seems roughly what it means to say the action of intentional agents is rooted in reasons, beliefs and desires. Complex entities are intentional agents entities with reasons, beliefs and desires because they are symbol using interpreters: in the case of conglomerates, their human subsidiaries, operating in the context of the decision process and the framework of policy, provide a top level of control with interpretative capacities. If this conclusion is correct, the thinness of an analysis of agency and responsibility which focuses only on issues of sanction at the molar and molecular levels (French's argument in Polanyian terms) becomes apparent. As Surber implies, the broader nature of conglomerate agency and responsibility must be approached in terms of historical, social dynamics. Questions about the responsibility of social entities must attend chiefly to the quality of the formal decision-making process (the molar level) as a discriminating (i.e., interpreting) device assessing the texture of relations²⁸ existing between the complex entity and other agents in the environment.

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⁴See French's discussion in his chapter "Kinds and Persons" (Collective and Corporate Responsibility, pp. 78-93) as well as his chapter "The Corporation as a Moral Person" (pp. 31-47).

⁵Peter French, The Scope of Morality (Minneapolis: University of Minnesota Press, 1979), p. 18.

⁶Jere Surber, "Individual and Corporate Responsibility: Two Alternative Approaches", Business and Professional Ethics Journal (vol. 2, no. 4, Summer 1983), pp. 74-80.

⁷Surber, pp. 80-85.

⁸French, "Commentary", p. 89.

⁹French, "Commentary", p. 89.

¹⁰French, "Types of Collectivity and Blame", pp. 160-161.

¹¹Virginia Held, "Moral Responsibility and Collective Action", Individual and Collective Responsibility, Peter A. French, ed. (Cambridge, MA: Schenkman Publishing Co., 1973), p. 105.

¹²French, "Types of Collectivities and Blame", p. 164.

¹³Martin Heidegger, Being and Time, trans. Macquarrie and Robinson (New York: Harper and Brothers, 1962), pp. 51-55.

¹⁴French, "Types of Collectivities and Blame", pp. 167-168.

¹⁵French gave up this contradictory term after his early article. As his recent book title (Collective and Corporate Responsibility) suggests, he now strictly separates collectivities and conglomerates/corporations.

¹⁶French, "Types of Collectivities and Blame", p. 164.

¹⁷French, "Types of Collectivities and Blame", p. 164.

¹⁸French offers this example, which I somewhat alter, in "Crowds and Corporations", pp. 275-277.

¹⁹Peter A. French, "The Corporation as a Moral Person", American Philosophical Quarterly (Vol. 16, No. 3, July 1979), pp. 211-212. One of the more interesting questions at this juncture is whether or not it is possible for there to be such a rich informal organizational structure that a complex rather than a compound entity must be envisioned. Perhaps this is sometimes implied in our ordinary use of the term "community" when we mean a collectivity whose identity does not consist solely in the identities of its membership. Joel Feinberg touches somewhat obliquely

²¹ Much of the literature on business ethics treats such dilemmas. R. S. Downie ("Responsibility and Social Roles", Individual and Collective Responsibility, p. 79) seems to me nicely to class these types of individual moral questions under three categories: the morality of role-acceptance, the morality of role-enactment, and the morality of the role as such.

²² French, Collective and Corporate Responsibility, p. 40.

²³ French, Collective and Corporate Responsibility, p. 40.

²⁴ French, Collective and Corporate Responsibility, p. 93. French seems to hold a type of social constructionist view like that often found among sociologists of knowledge.

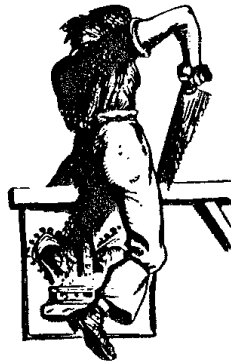
²⁵ See Polanyi's discussion in The Tacit Dimension, p. 35.

²⁶ Michael Polanyi, Personal Knowledge: Toward A Post-Critical Philosophy (New York: Harper and Row, 1958), p. 329.

²⁷ Polanyi, Personal Knowledge, p. 327. See The Tacit Dimension, pp. 29-92 and Personal Knowledge, pp. 327-405 for Polanyi's elaboration of the principles outlined above as a full-blown evolutionary ontology.

²⁸ See, as an example of this perspective, Charles S. McCoy, Management of Values: The Ethical Difference in Corporate Policy and Performance, (Boston: Pitman, 1985), pp. 29-230.

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BOOK REVIEW

Reflection, Structure, and Psyche in Postcritical Perspective

by
R. Melvin Keiser
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"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 those who use Polanyi to all who seek a personal perspective 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 perception. His figure-background distinction is a perceptual 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, and "concrete" as a uniting of parts, a coalescence, involving 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 objectivistic 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 carry 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, 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 reinhabit 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.

Merleau-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, 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, 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 color 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 behavior), describe what is involved in a creative enterprise (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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LETTERS TO THE EDITOR

TORRANCE ANSWERS PROSCH ON POLANYI'S CONVICTIONS ABOUT GOD

Dear Editor:

I was quite astonished to read the following sentences at the conclusion of the review of Drusilla Scott: Everyman Revived:

"To the extent that Drusilla Scott leaves us with the impression that Polanyi agreed - or did once agree - with her conviction that these things of the mind, including God, exists independently of our thought, just as do the realities investigated by our science, I believe she is wrong."

"But regardless of this error (one committed indeed by many religious followers of Polanyi) I find Drusilla Scott's book to be captivating little gem."

I fully agree with what Harry Prosch says about Drusilla Scott's lovely book on Michael Polanyi's thought, but wish to say that it is not she but Harry Prosch who is wrong, and very wrong indeed, about Michael Polanyi's convictions about God. After Michael read my book Theological Science in which I argued at length for the scientific objectivity of our knowledge of God who exists independently of our human conceiving of him, he asked me to act as his Literary Executor after he had died. After reading the publication of Meaning under the name of Harry Prosch as well as his own, he was deeply disturbed, as he felt his thought had been wrongly slanted. He said that he would not like to have his ideas baulderised after his death as had sometimes happened with Einstein's ideas after his death. I was not very keen to undertake this duty, as I already had so much on my hands, but when he pressed me, I agreed. Now that I have read the false slant put on Michael's convictions about the independent reality of God, I understand why Michael asked me of all people to do this for him. Hence as his Literary Executor I take this opportunity to put the record straight. There is no question at all about the fact that both Michael and Magda believed in God in the way Lady Drusilla Scott has indicated. It is no service to the Truth for Harry Prosch to slant Michael Polanyi's convictions according to his own preconceptions.

Thomas F. Torrance
Professor Emeritus
of Christian Domatics,
Edinburgh University

BARKER QUESTIONS DRUSILLA SCOTT'S NARROW DEFINITION OF TRADITION IN SEX EDUCATION

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 own 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," or "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.

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From Convivium

TRUTH AND THE FIDUCIARY MODE IN MICHAEL POLANYI'S PERSONAL KNOWLEDGE

I should like to put before readers of Convivium a difficulty I have long had over Michael Polanyi's conception of truth in Personal Knowledge. Polanyi was concerned, rightly, to attack the notion that thinking, and indeed its testing, can be reduced to something purely objective, formal or specifiable. There is always the personal involvement of the thinker, judging, probing, following clues in the penumbra of unspecified "tacit" awareness which surrounds anything we are concentrating on in "focal" awareness. Others have said this kind of thing, but what is distinctive about the way that Polanyi says it, besides his marvellous spread of examples, is the central place he gives to personal commitment. If we cannot rely on impersonal criteria as sufficient guides, there is no way of evading the thinker's own personal judgment. So Polanyi's "fiduciary mode" calls for any assertion p to be understood as "(I believe) p". "I believe" is a personal act of commitment; it is not just "I think" in the weak sense of think, which often just means "I am not sure". Commitment is an act of personal acceptance of a conviction, made with an orientation towards the reality one is seeking to understand, and with openness towards any clues as to its nature. This is indeed how one seeks to know; it puts heuristics, the nature of discovery, into a central place, and it is significant that

Polanyi often links knowing with discovering. Indeed, his theory of knowledge could be called a "going for" rather than a "got it" view.

My difficulty, however, is what happens to truth in this setting. Here I shall chiefly be going on the chapters "The Logic of Affirmation" and "Commitment" in Personal Knowledge. Polanyi says that to say that a sentence is true is to authorize its assertion, and that to assert is to do something, so that "truth becomes the rightness of an action" (p. 320). "The function of the word 'true' is to complete such utterances as 'p is true', which are equivalent to an act of assent of the form 'I believe p'" (p. 315). "The word 'true' does not designate, then, a quality possessed by the sentence p, but merely serves to make the phrase 'p is true' convey that the person uttering it still believes p" (p. 305).

These are only a selection of the passages where Polanyi makes this point, so we must take it as his considered view of what he means by truth. It goes with a rejection of the "correspondence" theory, i.e. that a sentence is true if it accords with the actual facts, or with reality. Of this he says "The 'actual facts' are accredited facts, as seen within the commitment situation, while subjective beliefs are the convictions accrediting these facts as seen non-committally, by someone not sharing them" (p. 304). Polanyi distinguishes "subjective", an opinion one happens to hold, or which can be ascribed to one by someone else, from personal commitment, a view held by a person who takes responsibility for asserting it. He recognizes there is always a risk in commitment; we may be wrong, and we have to come to change our commitment. But what then happens to truth? The p in "I believe p" was then true and becomes false when I come to say "(I believe that) I no longer believe p". The truth and falsehood of p will depend on what I assert in my different commitments, and will change with them. To say that p is true is to vouch for my belief in p; it is to make a claim. But is this all that is meant by its being true? We must remember that there is no criterion outside the commitment situation to which I can appeal to underwrite my endorsement. So the best we can do is to make a claim to truth, and the claim may be misplaced (as Polanyi indeed recognizes, though this does not lead him to modify his definition of truth).

I think the issue might have been clearer if he had spoken of "responsible conviction" rather than "commitment" (as he sometimes does in later writings where the word "commitment" is less prominent). We can reasonably hold convictions and take responsibility for them, and yet acknowledge that we might be mistaken. But to do this will mean holding in some sense to a view of truth as accordance with reality, however difficult it may be to say just what this accordance consists in. I think Polanyi realizes this when he speaks of the need to be oriented towards reality and responsive to clues. But his concern to attack impersonal objectivity leads him to reject any view of truth as independent of our convictions. He is right to say that any approach or judgment we make about the truth of anything cannot be

a matter of purely impersonal objectivity, but this need not lead to my having to define truth as that which I personally and sincerely assert.

I am stressing this because of the implications of this way of defining truth. Some philosophers have gone further, and spoken of the "redundancy" notion of truth: to say "p is true" amounts to an emphatic way of saying "p". Of this Polanyi says (p. 255n) "My re-definition of 'truth' is reminiscent of Max Black's 'No truth theory' of truth (Language and Philosophy Ithaca, New York 1949 pp. 104-105)", and he refers also to a view of P.F. Strawson. "But the purpose of both these authors is to eliminate the problem arising from the definition of truth, and not to accredit the use of 'truth' as part of an a-critical act of affirmation". This brings him nearer to another, and fashionable, view, which recommends substituting the notion of "warranted assertibility" for that of truth. However, those who speak of "warranted assertibility" are usually stressing reasons; Polanyi's "warrant" is in the act of affirmation itself. Another contemporary view is to speak of truth as "consensus" arrived at after long conversation (Habermas). All these views say something important, but I should want to say that truth is something which can not be identified with affirmation, warranted assertibility (in view of the corrigible character of our warrants), or convivial consensus. This means resisting substitutions for the old fashioned notion of truth as accordance with reality, and distinguishing what may really be true from any claim we can make, however responsibly and sincerely.

I do not think that Polanyi would want in the end to deny this, but the way he defines truth can give support to some who would deny it. Perhaps the trouble is that there are two levels of commitment, which I do not think he distinguishes explicitly. One is the underlying commitment which he speaks of as "my calling" - my dedication to search for truth and to declare my findings. This is not reversible. The other is the commitment to particular presuppositions and views which one may come to hold in the course of following this calling. Polanyi stresses our personal involvement in these, but they are nevertheless reversible, and he knows that they are. But by not distinguishing these two levels of commitment, he can give encouragement to those who say that the view we take simply depends on what set of presuppositions we choose to adopt. The chief exponent of this is Paul Feyerabend, and he sums it up as "Anything goes". I note that Feyerabend's book Against Method was recommended in a cyclostyled number of Convivium.

I shall add a postscript on how Polanyi's work might look in the context of contemporary philosophy. Philosophers are a mixed bag, and some of their discussions may seem to be of interest only to others of their sub-group. But there is a general recognition that there are different approaches. When Polanyi was writing Personal Knowledge the fashionable approach was the Logical Positivism of the Vienna circle, with its programme

of impersonal and formalized science and an empiricism which tried to extrude metaphysics. But even in the 1950s this was becoming no longer dominant. The two most influential philosophers in England at the time were Wittgenstein and J.L. Austin. Wittgenstein's Philosophical Investigations were published in 1953; here Wittgenstein brings out the wealth and range of meanings of words which certainly do not stand for clear and specified ideas. C.B. Daly in an article "Polanyi and Wittgenstein" in Intellect and Hope: Essays in the thought of Michael Polanyi (Duke University, North Carolina, 1981) draws parallels between a number of Wittgenstein's key remarks and ones in Polanyi. Polanyi had read Philosophical Investigations (Personal Knowledge pp. 113-114), and briefly attacks it for claiming to observe the uses of language rather than what language refers to, and he says that thereby what Wittgenstein does is "to contemplate and analyse reality, while denying the act of doing so". This is to say that the book contains implicit metaphysics, and if Polanyi had gone on to elaborate this and bring out the metaphysics, it would have been a notable contribution to the discussions that were going on. As it is, he dismisses Wittgenstein (mistakenly, Daly says) as a "Nominalist", i.e. one who thinks general terms are merely names used for classifying. What Wittgenstein was doing was to show the penumbra of meanings around these terms as they are used, and also to place their use within the way of life of a community. Understanding is seen neither as purely private, nor as something impersonal and fully specifiable, but as the ability to learn and use a skill in communication with other people.

Another essay in this same volume, one by Ian Ramsey, compares Polanyi and J.L. Austin. Austin held that every assertion had an "illocutionary" force: one must ask what kind of act was being done by it - was it e.g. a promise, a claim to truth, an excuse? And this implied there was a subject making the speech act. Austin's How to do things with Words did not come out till 1962, but he was highly influential in the 1950s. Closer discussion of such questions with contemporary philosophers might have helped to clarify some of the difficulties in Polanyi views, for instance on objectivity and reference, while it could have helped those philosophers to a deeper appreciation of what scientific thinking was really like.

Nowadays there is considerable diversity among philosophers, and the taboo on metaphysics has gone. There is a general repudiation of simple kinds of empiricism, and "Foundationalism", i.e. the view that knowledge can be based on indubitable starting points, such as self-evident axioms and clear and distinct sense data. The most impressive recent book I have read is The View from Nowhere by Thomas Nagel (Oxford University Press 1986). This is a profound study of how subjectivity and objectivity interpenetrate in all kinds of thinking. "Subjectivity" is here used not in Polanyi's reduced sense of a person's feelings and opinions as reported from outside, but in something more like his sense of the personal involvement

of the subject. Nagel is concerned with the struggle, never fully resolved, to enlarge the scope of objectivity within this inescapably personal framework, and he is alive to the tension as well as the fiduciary assurance that this can produce.

So the questions Polanyi was concerned with in Personal Knowledge are very much alive. It would be a pity if a stereotyped view of what philosophers are doing kept his admirers apart from them. You may think that in saying this I am just defending my tribe. But love of one's tribe was something Polanyi understood. And he once said to me "Keep up your criticism". I have tried here to follow his injunction on one or two points where I find difficulties. I have not dwelt on the many aspects of his work, such as the view of tacit knowledge, for which I have great admiration.

D. Emmet.

From Convivium

BOOK REVIEW

Harold P. Nebelsick, Circles of God: Theology and Science from the Greeks to Copernicus. (Theology and Science at the Frontiers of Knowledge) (Edinburgh: Scottish Academic Press, 1985) ISBN 0 7073 0448 2. xxviii + 284. Index. 16.00

A Theology don once confided that he felt excluded from the entire Aristotelian/Thomist/neo-Thomist world of thought simply because he could not see why a circle was meant to be better than a square. For those who share this disability, and for those who do not, Nebelsick's latest book will make fascinating reading. It is a story told on two levels, tracing the influence of the notions of harmony and circularity--the 'circles of God'--on our understanding of the universe while at the same time noting the continual interplay, sometimes beneficial, sometimes deleterious, between theology and science.

To the casual observer the sun, moon and stars seem of course to revolve around the motionless earth in a perfectly circular movement. More careful inspection, however, reveals that the same body may vary from time to time in size and brightness. As such variations can only be explained by their changing distance from the earth, their orbits cannot be perfect circles. It is the attempts by man over two millennia to reconcile the results of observation with the a priori demands of a theological aesthetic which Nebelsick charts and does so--as Professor Torrance remarks in his introduction--with the determination of a detective.

The concerns of the Pythagoreans were religious before they were scientific, and mathematical before they were religious. The distances between the heavenly bodies were decided on the basis of the progressions found in geometry; the planets themselves and the intervals between them were presumed to hum in accordance with tonal progression in music. These 'mysteries' were the carefully guarded secrets of the Pythagorean priest-

hood. Two centuries later, Plato's Timaeus pictured the universe as consisting of the flat disc of the earth surrounded by a concentric nest of immense, transparent hat boxes on which were fixed the planets. By the time of Eudoxus of Cnidos, the celestial system had become a series of concentric spheres around the earth. To account for the orbits' 'apparent' uncircularity, Eudoxus assigned not one but several such spheres to each planet. Aristotle increased the total number of spheres to 55, although his proposal was based less on observation than on the necessity of stellar movers becoming increasingly moved according to their proximity to the earth. A new direction was taken by Aristarchus of Samos who put the sun at the centre of the universe. This of course remained a minority view.

The definitive work of classical astronomy, unrivalled until Copernicus' De revolutionibus was that of Ptolemy, who combined the Pythagorean belief in the universal relevance of mathematics with the Aristotelian belief in celestial circularity and terrestrial linearity. He accounted for the apparently irregular, elliptical motion of the planets by placing them on the circumferences of smaller circles centred on larger circles centred on the earth.

The reaction of Christian theologians to the science of antiquity--a science which in turn owed much to Greek pagan theology for its development--was largely positive. Clement of Alexandria, Basil of Caesarea and other major fathers embraced it and, via mythicisation at the hands of Pseudo-Dionysius the Areopagite, it found a firm place in the writings of the great scholastics and even in Dante's poetry. Even so blatantly magical a group of beliefs as Hermeticism could achieve respectability and considerable popularity in orthodox Christian circles during the Renaissance. The 'ancient theology' (so-called because it was deemed to be older than Plato) combined Neopythagorean number mysticism and Neoplatonic world harmony with the divine gnosis of Egyptian magic. It promoted the idea of a fixed world surrounded by concentric circles of ever greater perfection, representing the hierarchical chain of being. It inspired Nicholas of Cusa's geometrical theology and, more importantly, Nicholas Copernicus' heliocentric cosmos.

It is in his treatment of the Copernican revolution that Nebelsick himself is at his most revolutionary: Copernicus, he argues, was no lonely, reluctant rebel fearful of the church's censure, no hero of modern science, but a tireless publicist of his own ideas who attracted the support of Roman Catholic and Protestant alike and who was probably influenced by Hermetic heliocentricism during his time at the university of Bologna. 'Whether or not Copernicus, like the ancient Pythagoreans, turned his thoughts to the heavens because their beauty and order were reflective of divinity, he certainly saw beauty and order there and attempted to fashion a system which would do these qualities justice.' (218) In Nebelsick's opinion, Copernicus broke no genuinely new ground because his system still retained, with some slight adjustments, the divinely-given circles. It was only when Kepler, on the basis of observation, squashed the circles into ellipses that physics could finally break free of its metaphysical pre-conditions.

Circles of God relates the well-known story of how the development of modern science suffered at the hands of an Aristotelian-inspired theology and its dogged proponents. But it also shows that science could not have developed at all without the impetus of theology. Nebelsick argues that theology and science are at their best in a complementary and mutually corrective 'dialogue': this is, he assures us, not the same as the medieval 'synthesis', which was in fact no synthesis but a bundle of contradictions held together by the dominance of one discipline over another.

The central thesis of the book is the principle pioneered by Torrance, that nature has its own rationality imparted by the God on whom it is contingent; alien, preceived patterns need not, and should not be, imposed upon it. The difficulty this thesis encounters is that nature's 'divine' rationality may be no more than a human pre-conception. It may be that the beauty, symmetry and rightness of the new physics are the modern, transitory equivalents of celestial circularity. Perhaps there is no final solution to this problem. Nebelsick himself rejects the opinion of Andreas Osiander (the Lutheran minister, mystic, patron of science and in-law of Thomas Cranmer) who believed in the value of hypotheses which accounted for the evidence, even if they eventually turned out to be untrue. A continual process of self and mutual correction may well prevent us, as Osiander put it, from looking fools to later generations, and lead us nearer the truth, where all disciplines meet.

David Bagchi

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