Although the work of Michael Polanyi is not as yet widely recognized among political scientists, there are, none the less, compelling reasons to consider its arguments seriously. This is especially true for those who study political philosophy. First, his work provides an alternative to the rationalistic understanding of science which has come to dominate modern thought. This rationalistic interpretation has had the effect of challenging the very legitimacy of political philosophy itself. As an attempt to reconstruct human and social order, political philosophy necessarily involves an act of creative imagination, and by its very nature the meaning of such an act is of the type that in part must be accepted rather than simply observed. This decision to accept certain arguments or to accredit certain experiences is necessarily a matter of personal judgment. Indeed classical political philosophy is based upon an acknowledgment of this fact. Yet in the climate of opinion emanating from the scientific revolution of the seventeenth century the personal involvement of the knower within the act of cognition came to be seen as the root of subjectivity. The objective character of modern science was associated with its impersonal quality and such a quality, in turn, was to be secured through a rigorous application of the scientific method. Accordingly there developed a growing reluctance to accept the scientific claims of those traditions of inquiry where such an application was inappropriate, e.g., ethics and political philosophy. Thus, scientific rationalism has come to constitute a challenge to the very enterprise of political philosophy itself.

A second reason for seriously considering Polanyi’s work is found in his conception of human consciousness. In developing his understanding of the actual operations of science, Polanyi proceeds to an analysis of human consciousness itself. This analysis, in turn,
leads him to posit the principles of a specific ontology within which his view of human nature can be appropriately located. Finally this particular understanding of the order of reality quite naturally implies a reconsideration of the principles of political order. As such his work is, in effect, the very material of political philosophy.

II

In the preface to the Torchbook edition of his *Personal Knowledge*, Polanyi writes of the incident which led him to undertake his philosophical investigation. He saw in J.D. Bernal’s *The Social Functions of Science* an argument whose logic, according to Polanyi, would eventually undermine the very possibility of scientific development. Bernal had argued that the pursuits of science should be directed by the public authorities in such a way as to serve the general welfare of society at large. Polanyi, on the other hand, felt that science must be free to follow the "power of thought to seek the truth" and that 'any utilitarian or pragmatic attempt to have it serve more basic needs implied the denigration of thought itself. This is so inasmuch as Polanyi understands the power of thought to reside in its ability to establish an unforced unity among heretofore unrelated particulars. To do so, reason must be free to read clues in a new and imaginative way, for in seeking the unexpected, it must transcend the given:

. . . the discovery of objective truth in science consists in the apprehension of a rationality which commands our respect and arouses our contemplative admiration; that such a discovery, while using the experience of our senses as clues, transcends this experience by embracing the vision of a reality beyond the impressions of our senses, a vision which speaks for itself in guiding us to an ever deeper understanding of reality. (6).

At first Polanyi associated Bernal’s position with the materialistic tenets of Soviet Marxism. Yet he soon found that his own defense of intellectual freedom proved to be no more acceptable to the dominant schools of Western philosophy than it had been to the Marxists. This resistance was due to both his acceptance of a teleological metaphysics and his emphasis upon the fiducial quality of scientific knowing. For Polanyi objective truth points forward to

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a vision of reality which transcends the experience of our senses. Such a transcendent vision is meaningful if it is real and it is real if it is capable of further revealing itself in the future.\(^5\) The actualization of this potential, however, cannot be known at the moment of initial perception. Thus one must intuitively trust in his discovered meanings. Yet it is precisely the unwillingness of man to grant such a trust that is so characteristic of the present age. For Polanyi this situation can only be explained in terms of the particular climate of opinion that has characterized Western civilization since the seventeenth century.

The continuity between the seventeenth century and the present is basically a cultural one. It is established by the relatively stable set of presuppositions which guide modern thinking.\(^6\) Generally these assumptions are based in the intellectual "achievements" of the scientific revolution; and, as a skeptical reaction against the dogmatic forms of speculative philosophy, they represent a healthy return to common sense and experience. Yet, as is often the case, skepticism soon generates its own form of orthodoxy. And in this particular instance, the orthodoxy of scientific rationalism became a cultural and intellectual force of unique authority. Indeed in Polanyi’s analysis, modern science—or more accurately, the ra-

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5 Polanyi arrives at this understanding of reality after an examination of the work of Copernicus and a discussion of the concept of objectivity. See his *Personal Knowledge*, pp. 3-17. In a later work he summarizes his understanding as follows: "Since we call 'real' any meaningful entity that we expect to manifest itself in unexpected ways in the future, we think of it as something that has a 'life' of its own, so to speak." Michael Polanyi & Harry Prosch, *Meaning* (Chicago: University of Chicago Press, 1975), p. 66. Referred to hereafter as Polanyi, *Meaning*.

6 "The seventeenth-century revolution in philosophy stood and we still stand—under the authority of the 'new science,' and this was primarily the science of inorganic matter... Today... the hope of a universal mathematics, of an exact science of life, of man, of society, founded on the automatic manipulation of unambiguous 'objective' variables, remains a predominant ideal of scientists and philosophers. Both the ideal of reason as analysis, in each of its guises and disguises, and the revolt against reason by more subjectivist philosophers, have remained, whether as acceptance or rebellion, within this single conceptual frame." Marjorie Grene, *The Knower and The Known* (London: Faber & Faber, 1966), p. 13.

7 "Scientific rationalism did serve man well as long as it was moving towards its false ideals from a great distance. But this could not last. Eventually the truth-bearing power of its absurd ideals was bound to be spent and its stark absurdity to assert itself. This is what has happened in the twentieth century. Michael Polanyi, "The Two Cultures," in *Knowing and Being*, ed. Marjorie Grene (Chicago: University of Chicago Press, 1969), p. 42. Referred to hereafter as Grene, *Being*. 
tionalistic interpretation of modern science—is the most important single element contributing to the intellectual crisis of the age:

We need a theory of knowledge which shows up the fallacy of positivistic skepticism and supports the possibility of a knowledge of entities governed by higher principles. Positivistic skepticism is one of a number of fallacies that have had their origin in modern science. In the days when it controlled all knowledge, religious dogma was a source of many errors. Now that the scientific outlook exercises predominant control over all knowledge science has become the greatest single source of popular fallacies.  

The distinction suggested above between science and the rationalistic interpretation of science is an important one. Science as the search for truth concerning the nature of reality is not the problem at issue. Indeed the opposite of science traditionally was understood as opinion, and Polanyi is by no means arguing on behalf of the love of appearances. The rationalistic interpretation of science, however, includes, as any interpretation must, a belief system. And it is the particulars of this specific belief system that Polanyi finds to be destructive. Following Polanyi, we shall designate the belief system of modern rationalistic science by the term "critical philosophy." The meaning of critical philosophy is most apparent in the ideals it sets forth—in particular, the ideal of scientific detachment as a means of producing impersonal and therefore universal knowledge.

The most dramatic expression of the critical understanding of reason can be found in the work of the two major philosophers of the modern scientific revolution—Frances Bacon and Rene Descartes. Both men understood themselves to be radically breaking from the traditions of Western culture. Although each attempted to guard against appearing as a political or theological radical, the logic of their argument points to a clear break. In the analysis of each, Western civilization was pictured as rooted in opinion rather than truth; its philosophy was excessively speculative; and its science inadequately technological. The solution to this problem was to begin anew. Specifically, it was to establish a new social order based on the tenets of a new science.

As different and distinct as these two thinkers were (one an empiricist; the other an intellectualist), both agreed that the new science would be distinguished by the explicit character of its

s Polanyi, Meaning, p. 24.
propositions. Scientific truth is explicit truth. Its statements can be formulated in a clear and distinct manner and its facts arranged in logical and systematic tables. Inasmuch as such knowledge is logically specifiable, it is at the same time amenable to control by a method. This, in turn, implied that the technique of scientific discovery could be explained in terms of a universal, repeatable, and reversible process. Finally both Bacon and Descartes suggested a view of the scientific mind which emphasized its universal rather than personal quality. Bacon's discussion of the idols and Descartes' mind-body dichotomy served to establish an understanding of man which viewed him primarily as an instance of a universal, abstracted mind. The person, that is, one who can meaningfully use the first person singular possessive pronoun from within a situation, is replaced by a rationalistic fiction—be it Bacon's "well-purged mind" or Descartes' "pure and attentive mind."

Rejecting the critical ideal of strict objectivism, Polanyi develops an alternative which he terms "personal knowledge." Basically it is a conception of science which acknowledges the active and legitimate participation of the knower within the act of cognition itself. Thus in Polanyi's scheme involvement rather than critical detachment becomes the ideal scientific attitude. Yet it is a form of involvement which does not imply subjectivity. On the contrary, for Polanyi involvement is the enabling condition of objective knowledge itself.

Such is the personal participation of the knower in all acts of understanding. But this does not make our understanding subjective. Comprehension is neither an arbitrary act nor a passive experience, but a responsible act claiming universal validity. Such knowing is indeed objective in the sense of establishing contact with a hidden reality; a contact that is defined as the condition for anticipating an indeterminate range of yet unknown (and perhaps yet inconceivable) true implications. (xiv)

Incorporating elements from such diverse traditions as Christianity, Gestalt psychology, pragmatism, and existentialism, Polanyi begins his argument by an investigation of such scientific concepts as objectivity, probability, and order. In each case, he attempts to show how the "objectivist" framework fails to explain adequately the operations and practice of science itself. Even in its

9 These sources are mentioned by Polanyi in a series of notes he compiled after a conversation with Paul Tillich on February 21, 1963. Typewritten and circulated privately.
most exact forms, science depends upon an act of appraisal; The
scientist must be able to perceive the real and unforced coherency
which orders the particulars of experience. Without such skill, 
neither discovery nor verification is possible.

Rejecting the Cartesian distinction between art and science, Polanyi argues that science, like any craft, is successful when its 
practice is successful. That is to say, those rules which are useful for- its correct operation can guide its performance only if integrated into the practice itself. Such an act of integration, however, 
cannot be further reduced to another set of prior rules. Thus contrary to Descartes’ claim, there is no method by which one can be taught to use a method correctly. Maxims must be applied; they 
must be brought to bear upon those conditions where such an application is appropriate. Yet the suitability of any particular application is not the question addressed by the maxim being applied—and logically it cannot be. This would be so even in the case of a maxim dealing with the application of applications. Thus science ultimately depends upon a set of unspecifiable skills whose 
very unspecifiability rests in the logic of the integrative act:

“This shaping or integrating I hold to be the great and indispensable 
tacit power by which all knowledge is discovered and, once discovered, is held to be true.”

At this point, one must be completely clear as to what Polanyi is 
saying. In pointing to the tacit or unspecifiable element in any skillful performance, Polanyi is doing more than simply acknowledging 
the fact that we often rely upon unspecifiable particulars. or assumptions. Indeed supporters of the critical tradition could admit this reliance as fact but at the same time advocate the ideal of complete specifiability. In contrast with this, Polanyi is arguing that in principle knowledge contains an unspecifiable component. Thus the tacit dimension is both psychologically and logically necessary. This, is so because of the very structure of human awareness.

In his analysis of awareness, Polanyi distinguishes between two types: subsidiary and focal

We may say that when we comprehend a particular set of items as part of a whole, the focus of our attention is shifted from the hitherto uncomprehended particulars to the understanding of their joint meaning. This shift of attention does not make us lose sight of the particulars, since one can see a whole only by seeing its parts but it changes altogether the manner in which we are aware of the particulars. We become aware of them now in terms of the whole on which we have fixed our attention. I shall call this a subsidiary awareness of the particulars by a contrast to a focal awareness which fix attention on the particulars in themselves, and not as parts of a whole.

It is important to understand that the distinction here is not one between consciousness and subconsciousness; for, according to Polanyi, both forms of awareness are indeed conscious. Rather, the distinction is one of interest and function. The objects of a focal awareness are of interest in themselves; the objects of a subsidiary awareness are of interest in that they bear upon a comprehensive entity which they in turn constitute. Thus subsidiary awareness perceives the significance of any given particular in terms of the focal meaning to which it points. Drawing upon a Gestalt analysis of perception, Polanyi understands the significance of subsidiary particulars to rest in their placement within a contextual structure. And it is precisely this placement which necessitates their tacit character. Knowledge must rely upon subsidiary awareness and this reliance must necessarily be an uncritical one. For, if one were to examine focally the subsidiary particulars upon which he relies, these particulars would change their very meaning. Indeed they would not be the particulars upon which one relied at all. By focusing directly upon such particulars one removes them from that original context to which they contributed and transforms them into the focal point of a new contextual structure. As such, these particulars take on new functional, phenomenal, semantic, and ontological qualities. By being "attended to" rather than "attended from," they have a different role in the structure of knowledge. They appear differently; they mean something different; and they indeed, are something different.

14 Polanyi's most detailed analysis of the subsidiary-focal structure is found in his *Tacit Dimension*. Here he develops the functional, phenomenal, semantic, and ontological aspects of the subsidiary-focal relationship. See in particular pages 3-25.
The fact that knowledge has a tacit component means, among other things, that we know more than we can say. Consequently given the logic of the subsidiary-focal structure, there can be no formally defined set of strict criteria by which to guide the act of cognition. Methodological rules, as such, must be explicit; yet knowledge contains a tacit dimension. Thus personal skill rather than method re-emerges as the vital element in man's effort to establish truth:

If, as it would seem, the meaning of all our utterances is determined to an important extent by a skillful act of our own—the act of knowing—then the acceptance of any of our own utterances as true involves our approval of our own skill. To affirm anything implies, then, to this extent an appraisal of our own art of knowing, and the establishment of truth becomes decisively dependent on a set of personal criteria of our own which cannot be formally defined. (70-71)

If Polanyi's understanding of the subsidiary-focal structure is correct, then knowledge assumes certain characteristics which are quite distinct from those posited by the critical tradition. For example, much of modern philosophy presupposes the fundamentally explicit character of scientific truth. Polanyi, on the other hand, insists upon the essential unspecifiability of subsidiaries. This means, accordingly, that all knowledge is "either tacit or rooted in tacit knowledge."

Secondly, the positivistic traditions of modern philosophy emphasize the essential importance of method for science. Methodological rigor is seen as being a primary achievement of modern science because it allows for a reversible and repeatable process of discovery and thus promotes duplication and testing. Polanyi's emphasis upon unspecifiability and skill, however, challenges the very role of method itself. He rejects both induction and deduction as accurate explanations of the logic of the cognitive act. For him all knowledge results from an act of tacit inference. That is to say, the relation of a subsidiary to a focus is formed by the act of a person who integrates one to another. Such an act is essentially an intuitive process and thus, according to Polanyi, cannot be reduced to a formal or systematic procedure.

16 For a sympathetic presentation of the role of method in science see Karl Jaspers, Philosophische Weltorientierung (Berlin: Springer Verlag; 1956).
Finally, it is fair to suggest that intrinsic to modern critical philosophy is a belief in the power of evidence to compel agreement. This is seen clearly in both Bacon and Descartes. For Bacon disagreement is rooted in the dominance of opinion and opinion is sustained by the idols of the mind. The idols tend to distort and corrupt information by mixing certain personal idiosyncracies with the data. By removing the idols Bacon hoped to let the facts speak for themselves—speak to the well-purged mind. Similarly for Descartes confusion was based in the dominance of tradition and tradition was understood to be essentially prejudice and bias. Through an exercise of radical doubt the "pure and attentive mind" could strip itself of these limitations and confront the clear and distinct truths of science. It is apparent that in both cases a common assumption is operative. Specifically, critical philosophy assumes that scientific truth is self-evident and, therefore, universally compelling to anyone who honestly confronts it. Polanyi, on the other hand, acknowledges that any interpretive framework provides a strong and fundamental resistance to contrary evidence. This is not simply because of the personal limitations of the scientist. Rather it is implicit in the very logical structure of knowing itself. Facts alone do not speak. They appear as fact only from within an accredited interpretive framework. Thus "self-evident" truth is properly seen as a passionate assertion claiming correctness in view of conclusions gained by tacit operations. Consequently what was once understood as the self-evident quality of certain "obvious" facts is revealed to be simply the degree of confidence engendered by particular assertions. The judgment as whether to accredit these assertions or not is, in turn, a personal one.

Indeed it is not surprising that Polanyi rejects the notion of explicit, methodic, and self-evident truth; for these rejections are based on a more fundamental denial. Ultimately Polanyi’s theory demands that we deny the validity of an absolute distinction between truth and belief or, in stronger terms, between science and faith:

For all truth is but the external pole of belief, and to destroy all belief would be to deny all truth. (286)

Polanyi’s insistence upon this argument accounts for much of

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17 Although it is not necessary to develop all the detail here, Polanyi analyzes the stability of interpretive frameworks in terms of their circularity, expansion, and exhaustion. See Personal Knowledge, pp. 288-294.
the criticism directed against his position. If truth is but the external pole of belief, then science would appear to be no more than a form of preference. And if science is only a preference, then all knowledge is subjective and facts are but a matter of consensus. By having denied a rigid distinction between reason and faith, Polanyi is accused of replacing science with mysticism. Yet according to him, personal knowledge can and does claim a universal validity. It does so because it is ontologically grounded. That is to say, our conceptions merit our trust because we believe them to be true; they are not true simply because we believe them. Our subsidiary-focal structures, therefore, are more or less adequate inasmuch as they more or less adequately contact reality:

Why do we entrust the life and guidance of our thoughts to our conceptions? Because we believe that their manifest rationality is due to their being in contact with domains of reality of which they have grasped one aspect. We grant authority over ourselves to the conceptions which we have accepted, because we acknowledge them as intimations-derived from the contact we make through them with reality-of an indefinite sequence of novel future occasions, which we may hope to master by developing these conceptions further, relying on our own judgment in its continued contact with reality. (104)

The argument here is an important one. In Polanyi’s scheme reason is not reduced simply to preference because in the exercise of responsible judgment man submits to universal standards. The argument that these standards are necessarily self-set, however, does not imply subjectivism; rather it simply acknowledges the fact that there is no position outside of a particular subsidiary-focal structure by which any given subsidiary-focal arrangement can be evaluated. The adequacy of any tacit act of integration can be judged only from that grasp of reality available to man because of another such act. Thus our obligation to the universal can be sustained only from within a particular commitment situation. The fact that we must trust our concepts in our effort to evaluate their adequacy does not imply solipsism. Rather it only denies the appropriateness of the modern understanding of scientific objectivity which is, in fact, borrowed from a divine rather than a human model.19


19 This point is developed by Poteat, "Appendix," p. 453 and by George Picht, "Der Sinn der Unterscheidung von Theorie und Praxis in der Philosophic der
The absence of a formal set of external standards by which to evaluate our commitment to a particular subsidiary-focal structure does not imply the impossibility of an evaluation in itself. Rather the evaluation must take place from within a commitment situation and its does so by an appeal to our intellectual passions. Polanyi understands our intellectual passions to be related to the general human urge to achieve intellectual control over any given situation. Although their satisfaction gives pleasure, the intellectual passions are not simply psychological byproducts which accompany scientific achievement. Rather they play an indispensable role in the very logic of knowing itself. Polanyi mentions ‘three roles in particular which are intrinsic to the development of scientific skills. First the intellectual passions perform a selective function by distinguishing between those matters which are of intellectual interest and those which are not. Although intellectual excitement is generated by statements which possess accuracy, profundity, and intrinsic interest, the scientist’s appreciation of these characteristics ultimately depends upon his general sense of intellectual beauty. Secondly the intellectual passions serve a heuristic function. The scientist’s intimation of a promised fruitfulness sustains his often unrewarding search and at important times encourages him to cross the logical gap of discovery. Major discoveries change our interpretive framework. Consequently it is impossible to achieve these discoveries by a consistent application of those principles constitutive of the previous framework. It is the heuristic character of the intellectual passions which directs the scientist in his movement between paradigms. Finally the intellectual passions serve a certain persuasive function: The discovery of a truth raises the demand that it be acknowledged. Yet such an acknowledgement is difficult precisely because major discoveries imply an accreditation of the very idiom within which they first emerged. Thus scientific demonstration oftentimes presupposes a prior conversion in which one thinker wins the intellectual sympathy of the other. Such a


This is similar to Jacob Bronowski’s argument in his Science and Human Values (New York: Harper Row, 1965), p. 7 and p. 41.

An example of this effort in the Classical Literature is Plato’s Gorgias. In this dialogue Socrates confronts the hostile position of Callicles: His arguments to persuade Callicles concerning the virtue of the just life fail precisely because he is unable to convert Callicles from a lover of power to a lover of wisdom.
conversion, however, is possible precisely because of the persuasive function of the intellectual passions. The imaginative appreciation of a promised meaning encourages the necessary adaptation of one’s subsidiary-focal structures. In this process of adaptation a new form of indwelling establishes itself as the publicly accredited structure of meaning or, in the language of Thomas Kuhn, as the socially authoritative paradigm of discourse.\footnote{Polanyi uses the term “indwelling” to describe that process by which man incorporates subsidiary terms as an extension of his own cognitive powers. Thus man comes to live in his presuppositions and by entering into particular subsidiary-focal structures actually forms his existence. This notion not only rejects the Cartesian subject-object dichotomy but also denies a strict separation between the realm of knowing and being. Although Polanyi himself does not develop the comparison, this would appear to be a return to the Classical Greek tradition which understood philosophy as both an existential and a cognitive achievement. Accordingly, virtue and insight are not unrelated. For a discussion of indwelling see his \textit{Personal Knowledge}, pp. 195-202 and Polanyi, \textit{Tacit}, pp. 3-25.}

The fact that the intellectual passions seek public accreditation is one of the important characteristics which distinguishes them from the appetites. The appetites seek private satisfaction; the intellectual passions, on the other hand, seek to fulfill universal obligations. They make a claim concerning truth and, as such, oblige all men to acknowledge the authority of such claims. Yet, as shown, Polanyi does not believe that truth can be reduced to a set of dogma, maxims, or formal operations. Truth has a public character; yet at the same time it has a tacit dimension and is based in essentially inarticulate skills. How, then, can its public nature be preserved? The answer for Polanyi is found in the concepts of tradition, authority, and community.

As shown, the articulate frameworks of knowledge have no meaning in and of themselves. They must be assimilated by a skillful reading which interprets the significant whole of which they are but a component. Yet such an assimilation is essentially an act of trust. We are being asked to dispose of ourselves (indwell), to commit our vision to a particular perspective of reality, and to accept certain experiences as authoritative without at the same time having a clear understanding of what is involved. The learner or novice is being asked to believe in order that he can know. Such believing may be easy in that the novice has a certain intuited appreciation of

From the perspective of a lover of power, Socrates simply does not make any sense.
what may be gained, but it is still an act of faith. All knowledge, being logically indeterminate, is unspecifiable in principle; its correctness, therefore, cannot be demonstrated; rather it is apparent only if assimilated. It exists as an available alternative, a tradition. The appropriateness of submitting to a specific tradition is evident only after the act of submission itself. Such a submission can be justified, therefore, only in terms of the authority of those who suggest it. The apprentice's trust in the skill of the master allows him rationally to submit to those traditions which the master knows to be fruitful. These traditions, in turn, are sustained as explicit beliefs by particular communities whose membership finds meaning in their use. Participation in traditional communities, therefore, is the primary means for the communication of knowledge. In effect Polanyi is arguing that belonging to a community, believing in its traditions, and thereby gaining access to the experiences which engendered them are all moments within a single process, i.e., the acquisition of knowledge.

In the effort to understand Polanyi's intention it is important not to confuse the above argument with traditionalism. Ultimately for Polanyi specific traditions are meant to be replaced. They are not the final expressions of a static truth that must be preserved at all costs. Rather, traditions are the means by which man incorpores specific subsidiary-focal relationships which allow him to see beyond the immediately given. Inasmuch as knowledge is logically unspecifiable, it cannot be transferred except by adoption. But what is adopted is a structure which gives man access to a reality which is expected to manifest itself in new and surprising ways. Accordingly traditions point beyond themselves to a reality whose very richness justifies their being replaced by new and more adequate alternatives. Similarly, intellectual skills can only be taught by their use and tradition is the means of specifying what constitutes correct use. But the skill taught is the skill of discovery and thus it is perfected in the very moment it transcends and thereby challenges familiar usage and custom.

Polanyi's understanding of tradition's relationship to reality serves to emphasize once again the universal intent of personal knowledge. The question whether such an intent is justified, however, can only be answered by an ontological argument. Specifically 23 This description is very similar to Plato's analysis of philosophical knowledge and the community of philosophers in his Seventh Letter.
Polanyi must demonstrate that the logical structure of human consciousness is similar to the ontological structure of that which it comprehends. He believes he has discovered such a similarity in the operational principles of the "stratified universe":

It seems plausible then to assume in all other instances of tacit knowing the correspondence between the structure of comprehension and the structure of the comprehensive entity which is its object...

Take two points:
(1) Tacit knowing of a coherent entity relies on our awareness of the particulars of the entity for attending to it; and (2) if we switch our attention to the particulars, this function of the particulars is cancelled and we lose sight of the entity to which we had attended. The ontological counterpart of this would be (1) that the principles controlling a comprehensive entity would be found to rely for their operation on laws governing the particulars to the entity in themselves; and (2) that at the same time the laws governing the particulars in themselves would never account for the organizing principles of a higher entity which they form.

Polanyi’s ontological position is summarized by the argument that molar functions are not reducible to the molecular principles. That is to say, the universe is structured in terms of ascending levels of organization. Each level is ordered by specific operational principles which determine the "rules of rightness" for that particular level. For example, the laws of biology specify those standards by which one can determine biological abnormality, malformation, and disease. At each level of organization, however, the governing principles of operation leave certain boundary conditions undetermined. This indeterminacy represents a degree of openness (or possibility) that is closed by the application of higher organizational principles. This closure has the effect of enforcing an ordered coherence upon the constituent particulars. Thus higher levels of organization can be seen as operating upon specific open conditions and forming, thereby, a focal closure which establishes the operational intent or purpose of the total unit. To return to the example of biology, biological life provides an opportunity for a number of alternatives. In the case of man, these alternatives can be formed or shaped by an application of intelligence and this act, in turn, gives human purpose or direction to life itself.

24 Polanyi, Tacit, pp. 33-34.
25 See for example his "Life's Irreducible Structure," in Grene, Being, pp. 225-
As in the subsidiary-focal structure, the real significance of the lower level principles can be found in their contribution to the higher ordering which they make possible. Just as the focus of a subsidiary-focal structure establishes a meaning supported by but not found in the subsidiaries, so too does the application of a higher principle of organization bring about a level of achievement sustained by but not found in the lower principles.

Polanyi refers to his system as the logic of limitation and contrasts it with the more popular theories of reductionism. Reductionism is the attempt to explain away seemingly higher levels of organization by treating them as mere manifestations of more basic properties. From Polanyi’s perspective, however, such an approach dissolves the very entity to be explained. By focusing upon the lower levels of organization, reductionism ignores the coherent entity to which they contributed and by which they were given meaningful closure. Logically that which provides closure or gives purpose to the lower cannot be reduced to it. Ontologically the ability of the higher to limit the lower is due to the power of the emerging reality that is apparent in the pattern of the whole. For example, the modern attempt to reduce biological life to chemical-physical principles necessarily ignores the achievement of the biological order, i.e., the establishment of living shapes.

In examining the stratified universe Polanyi distinguishes five distinct levels of achievement, i.e., five boundaries at which newer and higher principles appear operative. They are:

1. the inanimate order,
2. living shapes,
3. learning,
4. knowing the human mind, and
5. participating in a society of explorers.

At each level new possibilities of success and failure emerge. They are released and sustained by the antecedent forms of organization; but more importantly, by introducing a new standard of correctness they raise the level of existence itself. For example,


26 Accordingly consciousness can not be reduced to the chemical or physical principles of life. Rather life, itself, becomes meaningful only in terms of its contribution to the achievements of consciousness: “So far as we know, the tiny fragments of the universe embodied in man are the only centers of thought and responsibility in the visible world. If that be so, the appearance of the human
simple learning may be subjective and/or error-laden. At the next level, that of knowing the human mind, there is the additional demand to form an appraisal of the commitment involved in the act of learning. One must not only evaluate the application of a particular subsidiary-focal structure (learning) but also the appropriateness of the structure itself. Accordingly at each level new demands are made and, if met, new achievements emerge.

It may be appropriate at this point to examine a bit more closely the particular ontological achievements Polanyi associates with the last two stages of emergence. When we begin to examine the knowledge of another person, we inevitably encounter new interpretations of experience. Such an encounter, in turn, encourages us to evaluate the adequacy of our own commitment to the particular logical structures we have adopted. These standards, in turn, constitute the culture which provides the "impersonal" knowledge against which new meanings are measured. This firmament of mutual beliefs allows us to apply another's knowledge as the standard of rightness of our own, and thus becomes the guide for a society of explorers.

Within the stratified universe, Polanyi perceives a certain teleological design. That is to say, the pattern of closures involved in the application of ever higher principles of order points in the direction of a certain achievement, i.e., the emergence of meaning. The evolution from inordinate matter through living shapes and learning to knowledge of the human mind and shared intellectual standards is a movement whose logical coherency is given in the achievement of the last stage. The earlier levels of organization appear to be eliciting and sustaining the accomplishments of responsible consciousness.

We have just shown that living things, individually and in general, are also oriented toward meaning and it is clear that man's whole cultural framework, including his symbols, his language arts, his fine arts, his rites, his celebrations, and his religion, constitutes a vast complex of efforts—on the whole, successful—at achieving every kind of meaning. We might justifiably claim, therefore, that everything we know is full of meaning, is not absurd at all, although mind has been so far the ultimate stage in the awakening of the world. We may envisage then a cosmic field which called forth all these centers by offering them a short-lived, limited, hazardous opportunity for making some progress of their own towards an unthinkable consummation." (405).
we can sometimes fail to grasp these meanings and fall into absurdi-
ties. 27

Through an examination of the structure of human conscious-
ness and by the development of an appropriate ontology, Polanyi
has argued for the recognition of the existence of a meaningful
order in the world. The common logical structure of both the sub-
sidiary-focal relationship and the stratified universe suggests that
the particulars of reality are, indeed, organized in a meaningful way.
That is to say, there are intelligible directional forces operative
within reality. If Polanyi is correct, the achievement of meaning
becomes the telos of existence. In view of this, man is to open him-
self to the possibility of meaning and structure his society in such a
way that the life of reason becomes its dominant creative force.

III

This essay began with the suggestion that Polanyi’s work merits
the serious attention of political philosophers. Consequently at this
point in the argument it is appropriate to specify several themes
which may be of particular interest to the political scientist.

(1) Much of the scholarship that has dealt with Polanyi empha-
sizes his work in the philosophy of science. This is correct only to a
certain degree; for Polanyi’s chief concern is not with a proper
understanding of scientific technique per se but rather with the
larger cultural and intellectual impact of the critical interpretation
of science upon modernity. As documented in Personal Knowledge
the critical understanding of science is all but ignored in the prac-
tice of the exact sciences. Unfortunately, however, this interpreta-
tion has taken on a force of its own which is independent of the
practice which it sought to explain. It has become a general philo-
sophical and cultural paradigm and, as such, has exerted a destruc-
tive influence throughout Western thought. This is particularly
the case with those intellectual traditions which attempted to re-
form according to the standards suggested by the critical model.
Polanyi specifies biology, psychology, and sociology as particular
examples. As is well known, however, political science should also
be included in such a listing. The distinction between fact and
value, the split between political science and political philosophy,
and the recent emphasis upon empirical techniques are all mani-

27 Polanyi, Meaning, pp. 178-179.
festations of the influence of critical thought within the discipline. The behavioral movement, for example, was explicitly modelled after the natural sciences.  

One effect of such an influence was to assume that those traditions of inquiry which could develop a set of general rules somehow enjoyed a privileged status. This, in turn, had the effect of challenging the relevance of both the philosophical and historical approaches to political science. More importantly, however, the attempt to develop a political science of general rules carried with it a set of assumptions concerning both the nature of political things and the qualities of political man. From the classical perspective the view of man implied by a political science of general rules is a fundamentally erroneous one. Eric Voegelin summarized this argument in his review of Huntington Cairns's *The Theory of Legal Science*:

> Man, thus, is reduced for the author (Cairns) to the level of an object in the external world; man may be inventive, but he is not the spiritually creative center of society and history; man has lost his singularity and has become a fungible unit. The structure of society is assimilated to that of matter. The science of a social order constituted by persons can produce general rules only with regard to phenomena which are determined by the fungible biological structure of man, or by other structural elements on the periphery of the spiritual core of the person; man has to be reduced to the fungible structures in order to make a science of general rules possible.  

If Polanyi is correct, not only is the behavioral effort to mimic the empirical sciences ill-considered, but it is, at the same time, incapable of achieving its stated purpose.

(2) In developing his understanding of how men form the subsidiary-focal relationships they use, Polanyi emphasizes the notion of indwelling. Through indwelling man actually enters into his cognitive structures by appropriating the subsidiary terms as if they were extensions of his very self. By relying upon such terms, our ability to experience reality is extended beyond the limits of our body. Or, what amounts to the same, our "cognitive self" is enlarged so as to include features which were at one time beyond its reach:

Our body is the ultimate instrument of all our external knowledge

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KNOWLEDGE AND ORDER

whether intellectual or practical. . . . In all our waking moments we are relying on our awareness of contacts of our body with things outside for attending to these things. . . . In this sense we can say that when we make a thing function as the proximal term of tacit knowing we incorporate it in our body—or extend our body to include it—so that we come to dwell in it.

Accordingly for Polanyi the acquisition of knowledge is at once both an epistemological and an existential event. Learning requires that we dispose of ourselves, that we literally commit ourselves to specific forms of existence. In so doing we are actually choosing who we shall become.

Polanyi’s emphasis upon the existential dimension of indwelling and his discussion of choice is somewhat similar to related themes in the work of Karl Jaspers and Jose Ortega. Yet it would be a mistake to associate Polanyi with existentialism in a general way. Indeed he himself rejects the work of such existentialists as Nietzsche and Sartre as being ill-conceived and ultimately self-contradictory. Perhaps a somewhat more accurate association would be one between Polanyi and Plato. Both men argue that in some sense who you are conditions what you can know. And both accept the fact of a natural hierarchy among men. This is so inasmuch as certain forms of existence are more appropriate than others for the recognition of truth. Those who are particularly attuned to being represent a challenge to others to transform themselves according to their image. This challenge, in turn, is the source of authority for both Plato’s philosopher-king and Polanyi’s connoisseur. In both cases, then, authority is understood to be rooted in nature and is not primarily the result of conventional agreement.

Finally Polanyi’s conception of the stratified universe provides an opportunity for the theoretical reconsideration of the problem of freedom. The mechanistic worldview which accompanied the modern scientific revolution saw freedom in essentially negative terms. Freedom in a cosmos structured simply by material and efficient causes means the absence of restraint. Thus as a value it is necessarily opposed to such concepts as order, discipline, or authority.31

Polanyi’s ontology, however, provides another perspective on this issue. The order of the cosmos is not simply the product of ma-

31 An example of this position is provided by Robert Paul Wolff’s *In Defense of Anarchism* (New York: Harper Row, 1970).
material and efficient causes. Rather, according to Polanyi, the universe is structured according to organizational principles which promote the achievement of meaning. And such an achievement cannot be explained logically unless there is some principle operative in that direction which is immanent in all things. For Polanyi, then, the things of this world have a teleological orientation. What, accordingly, is freedom in such a universe? Basically it would be a liberation from lower principles of organization so as to allow for the achievements of a higher ordering. In traditional terms freedom would mean an openness to being and the ability to participate in its realization. Man is free where the animals are not because he stands at the open boundaries of a physical-chemical- and biological field. His participation in the order of ontological achievement represented by knowing the human mind and belonging to a society of explorers frees him to attempt a meaningful closure of the open boundaries of the lower orders. In a teleological conception of the universe freedom means the freedom to develop and, as such, is not necessarily opposed to either order or authority.

JAMES L. WISER

Loyola University of Chicago