



# Whitefield BRIEFING

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## *Michael Polanyi and Christian Witness to the Secular Society*

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### **An answer to the modern predicament**

Today our society and educational system is pervaded by the world-view of secular humanism. It is assumed that a human being is no more than an evolved animal. Reductionisms abound. For example, religious beliefs are said to be explicable in terms of psychological or sociological causation. Living organisms and their behaviour are no more than the product of their genes. It is the view of many, though not all, that science gives certain knowledge whereas religious and moral beliefs are mere opinions lacking justification. Dogmatic theological claims must be viewed with considerable scepticism as there is no objective or scientific way of justifying them. The agnostic view that no-one can *know* that there is a God has long been popular among educated people. All knowledge claims are regarded as relative. No absolute truth is available to the human mind.

The contemporary theologians Thomas Torrance, Colin Gunton and the late Lesslie Newbigin have advocated the thought of Michael Polanyi (1891-1976) as a way of countering these humanistic assumptions that pervade our culture, thus setting people free to hear and to think about the Christian Gospel. Polanyi was a Hungarian physical chemist who gained an international reputation while undertaking research in Germany in the inter-war years. He became the Professor of Chemistry at the University of Manchester, where he developed a philosophy that showed that personal judgements and human values are intrinsic to science. This he did to show that such judgements and values cannot be dismissed as merely subjective and that moral values and spiritual awareness are the essential foundations for the preservation of democracy. For Polanyi, modern thought, derived from the Enlightenment, has led to the false ideas that science provides us with totally impersonal knowledge (a notion labelled 'objectivism' by Polanyi) and that morals are non-objective personal opinions. In fact, Polanyi argued, all knowledge is imbued with personal components and human beings are essentially moral creatures. Such objectivism had been assumed by the totalitarian systems of fascism and communism, which were prepared to perpetrate the most appalling inhumanities in order to establish their utopias, because moral values were dismissed as illusions. But such utopias were sought only because of the intrinsic moral nature of man, while the immoral view that 'the end justifies the means' was accepted because of their rejection of objective moral values. Polanyi believed that democracy can only be preserved in the long run if it can be shown that human ways of knowing are rooted in a moral sense that we have a responsibility to search for and hold the truth, as far as we are able to, in spite of the fact that we must recognise that we might be totally wrong. To this end he identified the distinctly personal components that undergird all human knowledge, discovery, comprehension and creativity, in order to show that totally impersonal knowledge is a modern illusion and that science itself is an es-

essentially personal and moral endeavour. As a working scientist, Polanyi was convinced that the history and practice of science showed that it could not claim to achieve certain and purely objective knowledge, although scientists could reasonably claim validity for their findings. Polanyi sought to develop a new theory of knowledge (epistemology) that would deal with the paradox that we can feel fully justified in claiming to hold certain truths, while it may be the case that some of our convictions are false. He could thereby show that the complete objectivity that is usually attributed to the natural sciences is a delusion and is in fact a false ideal.

### **The explanation of tacit knowledge**

Polanyi's new contributions were those of 'tacit knowledge' and our 'indwelling' of what we know. Polanyi was impressed by the work of some psychologists who showed that we apprehend the objects of our knowledge such that certain aspects of our awareness, such as sensations, gain their significance by their assimilation into our knowledge of the objects that we observe. Thus we see and identify objects by means of mental formative powers which integrate our sensations such that we are able to know and appreciate the significance of the external objects that we know. Some cognitive psychologists have shown by experiment that we do not perceive objects by simply inferring them from our sensations, because we can see objects as complete even when essential parts are lacking from our perception. In such cases we complete a pattern by supplying the missing elements, often without realising we are doing this. Polanyi noted that one does not need to be consciously aware of all the clues that one integrates to form the perception of an object. For instance, we integrate two slightly dissimilar photographs in a stereoscope to form a three-dimensional apprehension of an object. Furthermore, there must be perceptual powers by which one continues to identify the changing appearances of moving things as representing unchanging objects, despite the fact that visual sensations are continually changing. Concepts in our minds thus integrate our sensations so that by means of them we are able to know that there are objects external to us and to identify what they are. But we are not fully conscious of this process and factors are involved that we cannot explain. Polanyi called this mode of knowing 'tacit knowledge' and it characterises

all human knowing.

From the experiments of cognitive psychologists who identified the activity of subconscious apprehension in the act of perception, Polanyi identified a systematic relationship between our subsidiary awareness and the focal knowledge of external objects. Our subsidiary awareness is the *means* by which we grasp the reality and significance of the object of our knowledge. Polanyi explained in his book *The Tacit Dimension*<sup>1</sup> that these two components in the act of knowing, namely, our subsidiary awareness (including sensations) and the focal object of knowledge, are related in four associated ways: functionally, phenomenally, semantically and ontologically.

#### **1. The functional relation.**

Through being aware in a non-explicit way of the subsidiary aspects of our knowledge, one integrates them and attends to the resulting focal object of knowledge. It is the subsidiary aspect, therefore, which we may be said to 'know' but be unable fully to describe explicitly. Thus, in a famous phrase of Polanyi, 'we know more than we can tell.' Polanyi gave some striking examples of this functional relationship, such as the recognition of the face of a friend even though we cannot explicitly describe what it is we actually identify in the act of recognition.

#### **2. The phenomenal relational.**

What is subsidiarily apprehended is transformed by our attention to the object of focal awareness. In other words, what is absorbed non-explicitly in the subsidiary aspects, such as sensations, *becomes different by virtue of its integration into the distal*. In the case of a face, the overall appearance contributes to the appearance of its individual features. We are aware of the features in terms of the overall facial appearance. That is how we recognise a face. A nose which is depicted in isolation from its face will often not look the same to us as when it is part of the face.

#### **3. The semantic relation.**

The combination of the functional and phenomenal relationships constitute the semantic (or meaning) relation between the subsidiary and the focal. The significance of the elements in the subsidiary aspects is found by the way they act as signs for the focal object of knowledge and thus *gain their meaning from the signifi-*

*cance of this object.* Without the meaning that is imparted to them by our awareness of the focal object of knowledge they would be meaningless. Meaning is always attained when this correlation exists in our awareness and so perception is always an act that bears a meaning for us.

#### **4. The ontological relation.**

This concerns our apprehension of the make-up of a complex object, such as the relationship between the parts of an engine and its totality as a power-producing object. From the functional, the phenomenal and the semantic relationships between the subsidiary and the focal awareness it is possible to derive an ontological relation between these two aspects of knowledge. As a meaningful relationship is established between these two terms, it is the basis by which we recognise or understand the focal object of our knowledge (what Polanyi calls a 'comprehensive entity'), which these two terms jointly constitute. Hence our subsidiary awareness is related to subordinate aspects of a comprehensive entity, like its surfaces or its components parts, and our focal awareness relates to the comprehensive entity as a whole. We can say, accordingly, that we comprehend the entity by relying on our subsidiary awareness of its particular aspects and by integrating this subsidiary awareness into our grasp of the focal object of knowledge and its meaning. As the subsidiary and the focal components in our perception are both necessary to each other in the act of recognising and understanding what we know, it follows that they must constitute the knowledge of an entity that relates to both of them.

#### **The indwelling of our subsidiary awareness**

The partly subconscious use of sensations is evident, he held, in our use of tools and probes in which the feelings in our hands are transposed away from us in achieving a meaningful integration of what they, the tools and probes, are doing. The feelings in the hand of a blind man when he is using a cane to find his way about are transposed by him to determine what obstacles exist in his immediate environment. In a significant sense he indwells the cane, which has become an extension of his perceptual apparatus. Likewise a workman, when hammering a nail into a piece of wood, indwells the hammer he is using, concentrating on its effect on the nail by means of the movement and sensations

in his hand, of which he is only subsidiarily aware. This understanding of knowing as a form of doing and as an achievement is developed by Polanyi to overcome scepticism regarding a realm of values that transcends mankind.

Polanyi argued that, just as we indwell our bodies and our tools in order to have an awareness beyond them, so also we indwell our sensual awareness in order to apprehend external objects and to grasp their significance. But our knowledge of reality includes the indwelling of notions that we have come to take for granted, such as our common sense awareness of the permanence of solid objects, the acceptance of physical causality, the mores of our culture, the values of our community, and our commitment to widely held comprehensive scientific theories, such as quantum mechanics and the theory of relativity. These deeply accepted notions form a framework of categories that we indwell when we direct our attention to the focal object of our knowledge and it is the means by which we process our subsidiary awareness in order to grasp the significance of what we know. This framework includes a set of commitments, although some are not explicit to us and some are not wholly justified. Polanyi maintains that we can only have knowledge from within the perspective of such a framework, and this means that all our knowledge is personal and evaluative, as well as being informational. It cannot be totally impersonal. The practice of science requires the acquisition of experimental skills, the assessment of what is significant, trust in the general validity of the scientific tradition and the personal comprehension of the *significance* of scientific theories. Mathematics, which might be thought to be wholly impersonal, requires the allocation of meaning to its symbols, the discrimination of the significant from the trivial, the exercise of non-linguistic intuitions, and the comprehension of its theories, all of which is only possible for a mind. Artificial intelligence is only possible because there are human minds that are able to ascribe meaning to its algorithms.

#### **Frameworks of beliefs**

Polanyi is in accord with postmodernists to the extent that he believes that all knowledge arises from within a deep-level framework of beliefs. But he does not accept their total relativising of all knowledge. For Polanyi mind-independent

reality will manifest itself in unpredictable ways which will transform these frameworks. External reality acts as a corrective to them, as the history of modern science demonstrates. Science seeks to acquire an ever increasing approximation to the forms of mind-independent reality. A scientific theory can be regarded as revealing truths about nature, and not just a means of co-ordinating our observations, when it produces unexpected results. A prime example of this for Polanyi was Copernicus' heliocentric theory of planetary motion, which eventually led to Newton's theory of gravitation. Human creations in art, literature, poetry, music, law, economics and politics are also realities to the extent to which they reveal themselves in unpredictable ways. Hence, for Polanyi, the fact of degrees of significance implied that there are degrees of reality. A stone is less real than a mind or a scientific theory, because a stone will manifest a much narrower range of characteristics in the future than a mind or a scientific theory. So reality bears significance and value and is not the mere factuality of existence.

### The ontological hierarchy and the answer to reductionism

Polanyi's theory of tacit knowing led him to affirm the objective reality of the operational principles that govern the make-up and operation of machines. Thus an engine can be more or less efficient, terms that are not applicable to its metallic parts. On similar grounds Polanyi rejected reductionism in biology, namely, that living things are no more than chemicals in motion. It is by indwelling the behaviour of an animal that we perceive that it is a centre of sentience and intelligence. It is by indwelling the words and behaviour of other human beings that we comprehend their intentions and character. The fact that we are morally purposive beings gives grounds for maintaining that there is an objective teleology in nature (e.g. the purpose of organs, the deliberative behaviour of animals). Hence, Polanyi maintained that the neo-Darwinian theory of evolution is necessarily inadequate as an explanation of the origins of man. In brief, Polanyi held that the panorama of living creatures manifests a hierarchy of differing levels of reality. It is when we grasp this that we can see that man is an embodied being that lives and thinks under a firmament of values such that he is aware that he has a responsibility to a truth that transcends him. Human beings want justice for themselves and expect others to hold to these values. They are not just bags of chemicals, as some reductionist biologists seem to imply. Polanyi enables us to see that personal judgements and moral values are intrinsic to science and human culture generally. Scepticism and reductionism are unjustified. If that be accepted, the Gospel can get a hearing and the thought of this renowned scientist can be used as a point of contact with the humanist, the agnostic and the postmodernist.

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