A PARADIGM SHIFT IN SCIENTIFIC ADVANCE: A MODEL FOR CHRISTIAN CONVERSION IN THE MODERN WORLD?

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Introduction

Since the Enlightenment of the eighteenth century an intellectual climate has developed in the Western world which is inimical to Christian belief. Anti-supernaturalism and historical relativism have so shaped the thinking of 'the modern world' that the claims of historic Christianity can scarcely be taken seriously. A plausibility structure has been developed in which, *e.g.*, the Christian claim that Jesus rose from the dead is manifestly inadmissible.[1] It may be acknowledged that the disciples had experiences which led them to the belief that Jesus had risen from the dead, and that such belief may remain inspiring today as a private religious conviction of those who choose to accept it. What cannot be accepted is the claim of historic Christianity that the resurrection provides the indispensable clue for a proper interpretation of the nature of the universe and the purpose of human life. In the public realm of commonly accepted scientific facts, on the basis of which all important collective decisions are taken, there can be no place for a risen Jesus Christ. When, through education, people are introduced to this modern view of the world they generally either set aside their religious beliefs as irrelevant, or retain a religious dimension but keep it strictly separate from the business of life in the 'real world'.

Neither position can do justice to the comprehensive claims of biblical Christianity. The New Testament calls for a conversion through which Christ becomes the controlling centre for all our thinking and the basic interpretative clue for our whole understanding of life. For modern Westerners this constitutes a revolution of the most radical order. This article is an attempt to consider how such a revolution may occur. The approach taken is to examine the character of the major

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1 See, *e.g.* P.L. Berger, *The Heretical Imperative: Contemporary Possibilities of Religious Affirmation* (London, 1980), pp. 1-30.

intellectual revolutions which have occurred in scientific history and to consider how these may suggest a pattern for the change of mind demanded by Christian conversion in the modern age. In particular, since Christian conversion is often regarded as a lapse into irrationality, we will attempt to locate the rational ground within modern conditions for such a change of mind. This is by no means intended to suggest that conversion is entirely and exclusively an intellectual matter. Other aspects of the human psyche have their legitimate place. However, it does seem particularly necessary today to demonstrate that Christian conversion does not require the surrender of intellectual integrity and that there is a firm rational basis for changing the mind of our contemporaries in the modern world.

Paradigm Shift in Scientific Revolutions

At the outset it has been freely admitted that a radical alteration in our whole perception of reality is required in the transition from a modern world-view to a Christian one. We may begin our study by noting that such revolutionary change is not unknown, or even unusual, in intellectual progress. In his *The Structure of Scientific Revolutions*, Thomas S. Kuhn has argued persuasively that any decisive scientific advance is characterised not by the steady accumulation of knowledge, but rather by the sudden emergence of a completely new perception of reality. Scientists normally work within well-established paradigms – models from which spring particular coherent traditions of scientific research – so that normal science consists in 'extending the knowledge of those facts that the paradigm displays as particularly revealing, by increasing the extent of the match between those facts and the paradigm's predictions, and by further articulation of the paradigm itself'.[2] What normal science does not do is to challenge or overthrow the commonly accepted paradigm. However, such revolutionary development does occur at the truly momentous occasions in scientific advance when a paradigm shift takes place. The progression involved in this kind of reconstruction is described by T.F. Torrance:

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2 T. S. Kuhn, *The Structure of Scientific Revolutions*, 2nd ed. (Chicago, 1970), pp. 10, 24.

> Certainly the recognition of what is new requires as a base of operations a conceptual framework to help us distinguish it from what we already know, but what is new can be identified properly and grasped only as we are able to break free from an antecedent framework and if we are able to assimilate what we are able to grasp of it out of itself through a reconstruction of that framework. Such is the heuristic function to which a scientist hopes to put his formalisation, but a transformation of the formal framework on which we rely in scientific reasoning, an adaptation of it in the very act of applying it to something new, so that it will enable us to strengthen our grasp of it, is a feat of an educated and disciplined intelligence of considerable intuitive power: yet that is precisely what happens in the moments of great creative advance in science.[3]

We hope to show that this kind of paradigm shift offers a suggestive model for consideration of Christian conversion in its intellectual aspect.

From an exhaustive historical study of such scientific revolutions, Kuhn concludes that what occurs on such occasions is, first, the awareness of anomaly. So long as the commonly accepted paradigm is unchallenged, scientific observers experience only the anticipated and the usual, even under circumstances where anomaly will later be observed. However, when a researcher, who is often either very young or very new to the field, persistently draws attention to something wrong in the paradigm itself, then the revolution is underway. That awareness of anomaly opens a period in which conceptual categories are adjusted until the initially anomalous has become the anticipated. At this point the discovery has been completed.[4] Such a discovery, since it cannot be accommodated within the existing paradigm, leads to a crisis, and eventually to the construction and acceptance of a new paradigm.

This reorientation of science by paradigm change is described by Herbert Butterfield as 'handling the same bundle of data as before but placing them in a new system of relations to one another by giving them a different framework', or

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3 T.F. Torrance, *Transformation and Convergence in the Frame of Knowledge: Explorations in the Interrelations of Scientific and Theological Enterprise* (Belfast, 1984), p. 146.

4 Kuhn, *Scientific Revolutions*, p. 64.

more colloquially, as 'picking up the other end of the stick'.[5] Butterfield notes that 'change is brought about, not by new observations or additional evidence in the first instance, but by transpositions that were taking place inside the minds of the scientists themselves'.[6] The result of such paradigm shifts as, *e.g.* those associated with Copernicus or Newton or Einstein, is very far reaching: 'when paradigms change, the world itself changes with them'.[7] It is not a matter of gradual adjustment. Rather an entirely new perception of the world is quite suddenly put in place.

The kinship of scientific paradigm shift to the intellectual revolution of Christian conversion may be illustrated by noticing a personal involvement in one of the classic scientific revolutions: the development and acceptance of quantum theory in physics in the early twentieth century. In the months before Heisenberg's paper on matrix mechanics pointed the way to a new quantum theory, Wolfgang Pauli wrote to a friend: 'At the moment physics is again terribly confused. In any case it is too difficult for me, and I wish I had been a movie comedian or something of the sort and had never heard of physics.' Less than five months later the 'conversion' had occurred and we find Pauli writing: 'Heisenberg's type of mechanics has again given me hope and joy in life. To be sure it does not supply the solution to the riddle, but I believe it is again possible to march forward.'[8] This case illustrates how personal, and indeed how costly, is the engagement and commitment required of a scientist in the process of paradigm shift. The conversion experience is extremely demanding and the new paradigm is usually fiercely resisted when first advanced. Often it is only the next generation which is able to accept the new paradigm and work on the new basis.

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5 H. Butterfield, *The Origins of Modern Science 1300-1800* (London, 1949), pp. 1, 7.

6 *Ibid.*, p. 1.

7 Kuhn, *Scientific Revolutions*, p. 111.

8 R. Kronig, 'The Turning Point' in M. Fierz and V. F. Weisskopf (eds.), *Theoretical Physics in the Twentieth Century: A Memorial Volume to Wolfgang Pauli* (New York, 1960), pp. 22, 25-6, cited by Kuhn, *Scientific Revolutions*, pp. 83-4.

Christian Conversion as Paradigm Shift

The argument of this article is that it is a 'paradigm shift' of the sort described by Kuhn which occurs in the process of Christian conversion. No suspension of proper scientific procedure is involved. On the contrary, what is required is the application of the kind of intense scientific inquiry which is characteristic of the great discoveries in the history of knowledge. We begin with the anomaly, in this case the resurrection of Jesus, which does not fit the currently prevailing paradigm. Then, as our inquiry inexorably convinces us of the validity of the resurrection, our acceptance of the anomaly throws the current paradigm into crisis. The crisis is resolved only with the emergence of a wholly new paradigm in which the whole of reality is viewed in the light of the resurrection.

As a matter of history, it was a paradigm shift of this sort that occurred under the impact of the gospel in the early centuries of the Christian era. As Torrance has commented, the incarnation and resurrection of Jesus Christ 'forced themselves upon the minds of Christians from their own empirical and theoretical ground *in sharp antithesis* to what they had believed about God and *in genuine conflict* with the framework of secular thought or the world-view of their age'. The great constitutive events of the Christian faith 'forced themselves upon the mind of the Church against the grain of people's convictions, as ultimate events bearing their own intrinsic but shattering claims in the self-evidencing reality and transcendent rationality of God himself, and they took root within the Church only through a seismic restructuring of religious and intellectual belief'.[9] Torrance notes that the same kind of conversion occurred, *e.g.* in modern physics in the transition from Newtonian principles to those of relativity and quantum theory. An ultimate reality forces itself upon our attention and, since it cannot be fitted into the formal framework of hitherto acquired knowledge, presents us with a dilemma: *either* to reject what is disclosed as absurd *or* to commit ourselves to a radical restructuring of our whole conceptual system. As we become engaged with the intrinsic claims of the subject matter, these finally assume a compelling

9 T.F. Torrance, *Space, Time and Resurrection* (Edinburgh, 1976), p. 17.

quality which drives us to take the second alternative, no matter how costly or disturbing that may be.

In the case of the apostolic witness to the resurrection as an historical event in space and time, modern Westerners find that they cannot accommodate it within their existing conceptual framework. This may lead them to reject it but there is an alternative: to rise to the challenge of rethinking our whole understanding of reality in the light of the resurrection of Jesus. This involves a reconstruction of our understanding of God. All dualistic thinking about the relation between God and the world is overthrown, for since God himself has entered his creation he must be understood as a living God whose very being and life are accessible to human knowing and participating. It involves a reassessment of our understanding of Jesus. The resurrection marks him apart from all other leaders and teachers, vindicates his divine claims and demands of us our ultimate loyalty and obedience. It involves a re-evaluation of the material creation and of God's commitment to it. Space and time are not closed but open to God who by his dynamic action establishes their identity. It involves a revolution in our understanding of death. As C. S. Lewis graphically put it, 'He has met, fought and beaten the King of Death. Everything is different because he has done so. This is the beginning of the new creation. A new chapter in cosmic history has begun.'[10] In fact, as we unfold the intrinsic intelligibility of the event of the resurrection, our whole conception of reality is steadily reconstructed. The anomaly throws the existing paradigm into crisis and the result is a paradigm shift which produces a wholly new view of the world.

The Question of Rationality

The question remains, however, of the relation between the old paradigm and the new and how we may make the transition from one to the other. Is it a 'brainwashing' exercise in which we abandon all our previous knowledge and are indoctrinated into the new system? Or is there some rational continuity in the conversion process? To return to Kuhn, his thesis has been criticised on the grounds that it

10 C.S. Lewis, cited by M. Green, *The Empty Cross of Jesus* (London, 1984), p. 132.

posits a total discontinuity between the old paradigm and the new at a time of scientific revolution so that there is no point of contact or comparison between them.[11] This, it is said, suggests that there is a lack of rationality in the progress from one to the other – it is a 'leap in the dark', conditioned chiefly by social pressure. Interestingly, a similar criticism is often made of the intellectual aspect of Christian conversion. Lesslie Newbigin addressed himself to it in his recent consideration of Kuhn's thesis:

> While there is radical discontinuity in the sense that the new theory is not reached by any process of reasoning from the old, there is also a continuity in the sense that the old can be rationally understood from the point of view of the new. In Einstein's physics, Newtonian laws are still valid for large bodies in slow motion. Newtonian physics are still valid for mechanics. Thus to recognise a radical discontinuity between the old and the new is not to surrender to irrationality. Seen from one side there is only a chasm: seen from the other there is a bridge. By analogy... the new understanding of the converted person might make it possible... to find a place for the truth that was embodied in the former vision and yet at the same time offer a wider and more inclusive rationality than the old one could.[12]

Likewise Torrance emphasises that, while the Christian message demands a very radical reconstruction of our whole conceptuality, it does not involve any surrender to irrationality. Rather there is sufficient continuity for us to see at work 'the relation between the created rationalities and the transcendent rationality of God in which the latter is recognised not as an intrusion into the former but rather as their affirming and establishing on their true and ultimate ground'.[13]

Considerations of this order lead Newbigin to the important conclusion that, 'From within the plausibility structure that is shaped by the Bible, it is perfectly possible to acknowledge and cherish the insights of our culture. There is an asymmetry in this relationship, as between the paradigms of science, but not a total discontinuity. From one side the other looks quite

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11 See, *e.g.*, J. Polkinghorne, *One World: The Interaction of Science and Theology* (London, 1986), pp. 13-14.

12 L. Newbigin, *Foolishness to the Greeks: The Gospel and Western Culture* (London, 1986), pp. 52-3.

13 T.F.Torrance, *Space, Time and Incarnation* (London, 1969), pp. 85-6.

irrational but from the other side there is a rationality that embraces both.'[14] This means that in the process of conversion there is no requirement for Christians to abandon the whole of their previous understanding. Rather it is taken up and embraced within a wider rationality so that they are still able to relate meaningfully to their previous interests, though their total frame of reference has been infinitely expanded. What we know with our modern mind is not abandoned but rather embraced and given a wider frame of reference in which its true bearing and proportion is brought to light.

This may readily be understood against the background of the emergence of a growing appreciation of the ontological stratification of the universe and the corresponding multi-levelled character of knowledge. The collapse, following the work of Einstein, of the idea of the universe as a closed mechanistic system has led to a deepening awareness of the infinite range or depth of objectivity and intelligibility in the universe and of the need for open systems and open structures of knowledge to comprehend it. No system can be complete or comprehensive on its own. In mathematics the incompleteness theorem of Kurt Godel demonstrated that no logical system can be complete without some reference outside the system to something beyond it. Applied beyond mathematics the Godelian theorems have had the effect of giving firm shape and justification to the multi-levelled structure of knowing.[15] The universe is conceived as comprising a sequence of rising levels, each higher one controlling the boundaries of the one below it and embodying the joint meaning of the particulars situated on the lower level. As we move through progressively higher levels of knowledge each one can embrace all that has been found on the lower levels yet at the same time transcend them.

It is as we move up this hierarchy of levels of reality, from the more tangible to the more intangible, that we penetrate to matters that are increasingly real and full of meaning. As Michael Polanyi illustrates the point, interpreting a grandfather clock or a Shakespeare sonnet in terms of physics and

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14 Newbigin, *Foolishness to the Greeks*, p. 63.

15 See M. Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (London, 1958), pp. 190ff., 259ff.

chemistry may produce an analysis that is valid as far as it goes but which at the same time calls out for interpretation on a higher level.[16] In Christian conversion we begin to come to terms with these higher levels of reality. This does not involve abandoning or making a break with the structures of understanding developed at the lower levels. Rather these are incorporated and given their proper place and proportion within a truer grasp of reality in all its depth and range. Within this structure of knowledge there is a line of rational continuity which runs through and sustains our transition from one paradigm to another in the process of Christian conversion.

The Question of Circularity

The idea of executing a paradigm shift by rethinking our conceptuality on the basis of the incarnation/ resurrection has aroused objections on the grounds that it involves an essentially circular procedure, *i.e.* we interpret the incarnation/ resurrection within a framework of thought of which it itself is a constitutive determinant. Therefore we are not standing outside the object of our enquiry and examining it in the light of external criteria. Such an objection may carry weight where the object in question is patient of examination by cross-reference. However, it is not valid here since in the case of the incarnation/ resurrection we are dealing with *ultimate* realities for which, in the nature of the case, there is no higher or wider system of reference within which they may be proved. As Michael Polanyi points out: 'Any enquiry into our ultimate beliefs can be consistent only if it presupposes its own conclusions. It must be intentionally circular.'[17] There is no way of escaping a complete circularity of the conceptual system but this does not foreclose the possibility of rational analysis and assessment. As Torrance indicates: 'The system must be one which is internally consistent and which rests upon the grounds posited by its constitutive axioms, without any alien additions, so that the conclusions we reach are found to be anticipated in the basic presuppositions. Such a system, of course, even if entirely consistent within itself, could conceivably be false, and must therefore be open to

16 *Ibid.*, p. 382.

17 *Ibid.*, p. 299.

reasonable doubt: but that means that the system stands or falls with respect to its power as a whole to command our acceptance.'[18] If we are dealing with a paradigm shift then such a procedure is not unreasonable, given that the axioms of the new paradigm can, in the nature of the case, be examined not by reference to any higher or wider system but only in terms of their own intrinsic intelligibility and compelling reality. There is no vicious circle here.

In fact, all branches of scientific study depend on at least a provisional acceptance of the axioms of the system. In physics, for example, we have to presuppose that there is order in the universe if we are to have a science of physics at all. But we are unable to offer any proof at the outset that there is order in the universe. It is an axiom which must be assumed and, finally, our acceptance or rejection of that ultimate truth depends on the power of the system as a whole to command our acceptance. The paradigm shift of conversion to Christianity involves the provisional acceptance of certain key axioms of the Christian world view but there is nothing irrational or unscientific about venturing to test out these axioms by seeking an apprehension of the system as a whole.

The Question of Subjectivism

A further criticism of the demands of Christian conversion is the allegation that they involve an inescapable and insidious element of subjectivity, in that they speak of realities which can be accepted only by faith. This carries weight where the ideal of knowledge is one which envisages a series of objective facts existing in absolute distinction from the investigator. However, in the face of the progress of twentieth-century science, the ideal of pure objectivity has proved to be a mirage, and the inquiring, experimenting, theorising, *subject* has come to be seen as intrinsically necessary to the development of scientific understanding. It is in the interplay between the objective reality and the subjective investigator that the real substance of scientific advance is to be found.

The work of Michael Polanyi has been particularly influential in drawing attention to the role of intuition, conjecture and the creative power of the imagination in

18 Torrance, *Space, Time and Resurrection*, p. 15.

scientific advance. He has sought to undermine the rigid objectivism of the positivist approach through a demonstration of the crucial role in scientific work of the 'tacit dimension': the intuitive apprehension of a structure in reality which lies behind all our scientific investigation and guides the integrative activity by which we make sense of what we perceive. It is upon this informal and implicit 'personal coefficient' that even the most completely formalised logical operations ultimately depend for their meaning and truth. Torrance points out: 'This is why Polanyi calls for a rejection of the objectivist notion of truth: complete depersonalization leaves no room for the informal acts of commitment to ontological reality upon which the assertion of factual truth depends, or for the fact that such a commitment necessarily implies certain basic beliefs concerning the nature of reality with a claim to their universal validity, since it is only in the light of those beliefs that he interprets empirical facts and observations.'[19]

The importance of the role of the subject becomes clear if we look at the actual practice of science. At the frontiers of research, scientists have to make difficult decisions whether or not to commit themselves to a new line of inquiry. They have to decide which problems are worth investigating and which are not. They have to make value judgements in the light of a vision of scientific activity. Then they are sustained in their mental struggle by a passionate concern to solve the problem they have decided to investigate. The purpose and values of the knowing subject have a vital role to play in the disclosure of knowledge. In a word, it is by faith that we gain understanding.

This does not mean a retreat into a subjective conception of truth. Polanyi is very careful to guard against the danger of subjectivism and argues that his concept of the personal transcends the division between subjective and objective: 'In so far as the personal submits to requirements acknowledged by itself as independent of itself, it is not subjective; but in so far as it is an action guided by individual passions, it is not objective either.'[20] In fact, however, this is the way towards a proper objective grounding of knowledge: 'It is in tacit

19 Torrance, *Transformation and Convergence*, p. 200.

20 Polanyi, *Personal Knowledge*, p. 300.

knowing that we have to do with the ontological reference of knowledge, in virtue of which we establish empirical contact with reality in its intrinsic coherence and rationality, and therefore with that aspect of knowing in which its content is grounded evidentially and objectively, although informally, upon the structure of experience or reality.'[21]

There is an irreducible fiduciary component in all our knowing which is emphatically non-subjectivist, in that it arises strictly from the compelling claims of the basic reality to which the inquirer has been exposed. Polanyi suggests that Augustine's axiom *nisi credideritis, non intelligitis* ('unless you believe, you do not understand') is universally applicable: 'We must now recognise belief once more as the source of all knowledge. Tacit assent and intellectual passions, the sharing of an idiom and of a cultural heritage, affiliation to a like-minded community: such are the impulses which shape our vision of the nature of things on which we rely for our mastery of things. No intelligence, however critical or original, can operate outside such a fiduciary framework.'[22] This is not to surrender to mere subjectivism. In a competent fiduciary act the agent 'does not do as he pleases, but compels himself forcibly to act as he believes he must. He can do no more, and he would evade his calling by doing less.'[23] Interestingly, Polanyi invokes Luther's 'Here I stand. I can do no other' as the model for the position occupied by all scientific pioneers in their fiduciary commitment to the truth which has become disclosed to them.[24] Far from being alien, personal belief and commitment are fundamental to scientific progress. As Polanyi puts it, 'Originality in science is the gift of a lonely belief in a line of experiments or speculations which at the time no one else considered to be profitable. Good scientists spend all their time betting their lives, bit by bit, on one personal belief after another.'[25]

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21 Torrance, *Transformation and Convergence*, p. 158.

22 Polanyi, *Personal Knowledge*, p. 266. *Cf.* Polanyi, *The Tacit Dimension* (London, 1967), pp. 13-14, 33.

23 Polanyi, *Personal Knowledge*, p. 315.

24 *Ibid.*, p. 308.

25 Polanyi, *Scientific Thought and Social Reality* (New York, 1974), p. 51, cited by Torrance, *Transformation and Convergence*, p. 195.

The crucial role of faith in the gaining of understanding is all the more pronounced in regard to knowledge of God, who is the ultimate ground and source of all intelligibility and truth. As we move up the stratified levels of reality within the universe, the role of the fiduciary component in the acquisition of knowledge becomes progressively more critical. Hence it is not surprising to find that at the highest level of knowledge, when we come to the transcendent reality of God himself, the exercise of faith is found to be particularly important. The 'personal coefficient' is central. It is only in the context of whole-life commitment that progress in true understanding is likely to occur.

The Christian theologians of the patristic era were aware of this when they insisted that proper understanding of God could not be gained without godliness (*eusebeia*), *i.e.* the embodiment of faith in a corresponding way of life and worship in the reverent service of God. The Reformers stressed one particular aspect of this – that in order to gain an accurate understanding of God, repentance (*metanoia*) is required, *i.e.* a commitment to changing one's mind and to changing one's life in accordance with the results of one's investigations. Here again, the demands of Christian conversion are little different in principle from those of scientific progress of any kind. The true scientist is not a totally detached and unmoved observer. Rather he is committed as a person to his work and ready to change his mind and change his life in the light of its results. Likewise in Christian conversion it is only as we get inside the way of life which corresponds to the divine revelation in Christ that we can attain the disposition of mind which is able to make progress in understanding it and to develop the appropriate modes of thought and speech which it requires. No advance in understanding may be attained without the exercise of personal faith and commitment. As in other fields, faith may be exercised in Christian conversion that is firmly grounded objectively and altogether removed from any mere subjectivism.

The Question of External Corroboration

Kuhn has pointed out the importance of external corroboration in the acceptance of a new theory.[26] In the case of Christian conversion, corroborating evidence is not lacking. The outstanding developments have been in modern physics, where the scientific revolutions of the twentieth century have produced a new understanding of the universe which is vastly more compatible with Christian belief. The idea of the universe as a closed continuum of cause and effect and the sharp contrast between 'real, mathematical time and space' and the 'apparent and relative time and space' of our ordinary experience, which have governed so much modern thinking and under which the Christian faith is practically unacceptable, have now been rendered obsolete. Einstein's relativity theory has demonstrated that neither space nor time can be regarded as absolute. The old deterministic system under which everything was rigidly understood in terms of cause and effect has proved inadequate to explain such established facts as the electro-magnetic field.

Meanwhile, quantum theory has shown that there is an unavoidable factor of uncertainty in all scientific calculations. The result has been the emergence of a much more open and dynamic view of the world in which aspects of reality are understood not by reference to any uniformity of causal patterns but in terms of their proper ontological intelligibility. In this way the fatal gap between empirical and theoretical concepts is transcended, and being is found to be essentially open, requiring open concepts and open structures of thought for its understanding. In this new intellectual climate Christian belief in creation, incarnation and resurrection has the opportunity to be presented in terms of its own intrinsic significance and without being squeezed into any alien framework of thought. This is a dramatic turn-around. As T.F. Torrance comments: 'Nothing like this has ever appeared before in the whole history of science, philosophy and culture, except in the theology of the pre-Augustinian Greek Fathers, who had to carry through the same kind of revolution in the basis of their culture as modern science is carrying out today. For the first time, then, in the history of thought, Christian theology finds itself in the throes of a new scientific

26 Kuhn, *Scientific Revolutions*, p. 155.

culture which is not antithetical to it, but which operates with a non-dualist outlook upon the universe which is not inconsistent with the Christian faith, even at the crucial points of creation and incarnation.'[27]

Modern science, far from undermining Christian faith as is often popularly supposed, in fact offers considerable 'corroborating evidence' to anyone involved in the process of Christian conversion. A further, and corresponding, area of corroboration lies in the extraordinary social and political changes of recent times. Polanyi and other philosophers of science argued from the 1950s that the open structures of the new science, and the open universe which they disclose, must lead to the collapse of totalitarian regimes and the spread of the open society. The events of the last few years in Eastern Europe have dramatically vindicated their judgement. The argument is that Marxism is a socio-political counterpart to a positivist and materialist notion of science, seeking to structure society in a way which corresponds to a closed, deterministic understanding of the universe. When transcendent realities and obligations are denied then the state invariably becomes the inheritor of all ultimate devotion. Recent developments in Eastern Europe have demonstrated the bankruptcy of such a system, and the rediscovery of spiritual values currently taking place in that part of the world acts as powerful corroborating evidence in the case of Christian conversion. None of this is intended to suggest that the intellectual transition from a 'modern' to a 'Christian' view of the world is self-evident or without serious obstacles. However, if external corroboration has a valuable role to play we should notice that it is not lacking either in the discoveries of modern science or on the stage of world history.

Conclusion

There can be no minimizing the radical nature of the mental revolution demanded in the modern world by the process of Christian conversion. However this in itself should not daunt us since 'paradigm shift' is common and indeed crucial in intellectual progress. In light of the multi-levelled character of knowledge we may embrace within our new Christ-centred

27 T.F. Torrance, *Theology in Reconciliation* (London, 1975), p. 270.

view of reality all the rational knowledge which has been disclosed to us in modern life. The difference is that it is all given its proper place and proportion in a comprehensive perception of reality which does justice to the full range and depth of the universe. Such a reconstruction can take place only on the basis of an acceptance of the incarnation and resurrection but, in the case of such ultimate realities, a circular procedure is necessary and the new system stands or falls by its ability as a whole to command our acceptance. Faith is indispensable in the development of the new understanding but the commitment of the personal subject is recognised to be crucial in all spheres of knowledge. Moreover, there is striking external corroboration available to anyone making the transition to Christian faith. It is never going to be possible to become a Christian strictly through a process of logical deduction but there are firm rational grounds accessible to modern man which offer a basis for Christian belief. The model for a change of mind suggested by the great scientific revolutions may illuminate the nature of the mental revolution demanded in Christian conversion. It shows that there is, at the end of the twentieth century, a path to Christian belief which is intellectually coherent and convincing.[28]

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28 An earlier version of this paper (under the title 'Scientific Revolutions: A Model for Christian Conversion in the Modern World?') was presented as Faith and Knowledge Seminar No. 10, at Chancellor College, University of Malawi, on 31st January 1991. The author is grateful to all colleagues who attended the seminar and made stimulating and encouraging contributions.