

THEOLOGY THROUGH SCIENCE

By Richard Kirby

Part 1 of 5

SERMON FOR SUNDAY JULY 1ST, 2007

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Theory: The relationship between theology and science has rarely been well understood. This sermon begins to explore the ways theologians and scientists can work together on theological and scientific inquiry.

Purpose: To develop a concept of scientific theology.

1. Introduction

In the work of theological inquiry or research, including systematic theology, the background against which the research is done has been, and continues to be, very varied. Theology has been approached from or through the *arts*, through *politics*, through *law* or *history*. This background influences the kind of theological research which is chosen, the methods used in it, and the kind of product which is considered acceptable as a result or a discovery, as a recognisable advancement of theological knowledge. This background influences, or provides entirely, the “instruments of thought” used to operate upon the chosen problem; the background discipline contributes to the “Paradigm”, in the sense of T.S. Kuhn,¹ within which the business of theology and theological research or inquiry is done. Thus, in the Modern Theologians volume, a survey was provided of “British Theologies” under the headings Theology through History, and Theology through Philosophy. For example, the group of theologians whose work was considered under the heading “Theology through History” were “those whose training and habit of mind has been historical, rather than systematic.”²

¹ The Structure of Scientific Revolutions, 2nd ed. (Chicago: Chicago University Press, 1970), passim.

² S.W. Sykes, “Theology through History” in David Ford (ed.) The Modern Theologians, An Introduction to Christian Theology in the Twentieth Century: vol. II, part I: British Theologies (Oxford: Blackwell, 1989), p. 695.

The work of Thomas F. Torrance offers another background or context for contemporary theology: this might be called, following the Modern Theologians example, Theology through Science. This is very clearly stated and argued by Torrance, in a long series of books and articles, particularly the books (in chronological order) TRcr (1962), TS & STI (1969), GR (1971), TRcl (1975), CTST & GGT (1980), DCO (1981), TCFK (1984), RST & CFM (1985), DCO (1981); and in the articles TSI (1985-6), FIST (1990) and ROSI (1988); in a number of book chapters such as “Divine and Contingent Order” (1982); and in the series he has edited (of which RST is a volume): Theology and Science at the Frontiers of Knowledge (1985, cont.).³

The collective viewpoint of these texts is summed up in the epithets by which Torrance has become known: “Theological science”, “Scientific theology”, “Christian theology in a scientific culture”, Theology and science in dialogue (mutual modification), “Theological and Scientific Inquiry”, and similar phrases or terms.

2. Three Types of “Theology through Science”

The phrase “Theology through Science” is admittedly ambiguous,⁴ but as an introduction to the thought and work of Torrance its ambiguity has merit. It can be taken to denote:

- (1) Theological research conducted in a scientific manner (this will be defined a little later in this chapter);
- (2) Theology inspired by the subject matter of science, especially the physical sciences.
- (3) Conjoint research at the frontiers of knowledge, undertaken by scientists and theologians (and ultimately, presumably, by “theological scientists”), on matters of common concern (such as cosmology, time, meaning) whether of material, spiritual, immanent or transcendental import. This third category is also, of course, an example of (interim) “interdisciplinary research”, even if in some ultimate or eventual sense theology is considered to be a transcendent or overarching discipline as in the old notion of the “Queen of the Sciences”.

³ The key to these abbreviations can be found [here](#).

⁴ Cf. Wolfhart Pannenberg, Theology and the Philosophy of Science (TPS, 1976), for a complementary approach which will be frequently cited here.

Cosmic disorder, the subject of this study, can be approached from all three of these categories, although as this is a report of research undertaken in a University theology department, it best falls into of category (2): theological research inspired by the subject matter of science, in this case cosmology. However, the writings which this research has investigated, namely those of T.F. Torrance, are themselves also an example of category (3), since much of Torrance's work has been, and is being, done with scientists in such contexts as the Center of Theological Inquiry, Princeton (designed to encourage such interdisciplinary research), and also is perhaps (Torrance would presumably argue) an example of category (1) research, since his book TS makes it clear that he wishes his work to inaugurate an era of "theological science". Whatever else is claimed for such "theological science", it must obviously at the least be "scientific", if only in the sense which Torrance gives in such texts as TS, STI, RST and GR.

Daniel Hardy provides recognition of the stature of Torrance as a philosopher of science, hence one especially qualified to promote category (3) research: "...he [Torrance] is virtually unique among theologians in the depth of his knowledge of the philosophy of the natural sciences...his work as a philosopher of science is conducted through deep engagement with major figures in the history of science."⁵ In Professor Hardy's discussion of T.F. Torrance's intellectual ancestry, he brings out the latter's development of the theologies of John Calvin and Karl Barth, noting the way Torrance shows the possibilities of a "scientific theology" which is to be found in the writings of these two earlier Reformed theologians.

Torrance has not, however, either simply repeated the thinking of the two earlier theologians, or extrapolated it unimaginatively; he has creatively adapted it to the modern scientific context. Barth, of course, thoroughly worked out the idea of a "scientific theology": theology is scientific in its "proper treatment of its object".⁶ Torrance has likewise engaged the issue of the commonalities of theology and science. Studying the "'New Objectivity' of Science",⁷ he encourages theologians to learn from Einstein's realism, as part of a searching dialogue between theologians and scientists. Torrance, however, goes much further than Barth in embracing the world-view of modern physical science.⁸

⁵ "Thomas F. Torrance", in David Ford (ed.) The Modern Theologians, An Introduction to Christian Theology in the Twentieth Century: vol. I, part I: Corresponding to Revelation, (Oxford: Blackwell, 1989) Chapter 3: pp. 71 and 73.

⁶ Church Dogmatics I/1, pp. 1-2.

⁷ Op. Cit. p. 82.

⁸ Cf. Barth's debate with H. Scholz (Pannenberg, TPS, pp. 269-75).

Moreover, Professor Hardy's treatment of the thought of Torrance shows that theology should not literally be or go "through science", any more than theology is "through philosophy". For theology should primarily be in the Son, through the Spirit, to the Father, according to revelation. But theology may pass "through" Science in interesting and important ways. The "through" of this phrase could be regarded as encompassing several possibilities or meanings: passing through (transition), the "through" of authorship and the "through" of instrumentality. Also, the specific idea of "Theology through Science" implies such varied meanings as "By means of" (science having an instrumental role in theology); "through" implying a transitional role, with, for example, the concepts of theology tested in "scientific theology"; and, more generally, the idea of theology being set almost entirely within the scientific outlook – imbued "through and through" with the mental disciplines of science. All of these meanings are to be found distributed across Torrance's work, together with the idea that actual scientific theories such as Relativity Theory can *inspire* theology.

3. Theological and Scientific Inquiry: An Introduction to the Rationale

To comprehend fully the complexity and richness of Torrance's thought concerning the significance of science for theology, it is necessary to turn directly to his own statements. It is a subject upon which Torrance has written repeatedly and at length, in many contexts. Thus, many starting points might be chosen in an area of his thought which is very wide-ranging. For the present study, the starting-point which has been selected is Torrance's (1984) address, "Theological and Scientific Inquiry" (TSI). It calls for "Conjoint Research Between Theology and Science at Points of their Deepest Convergence".

In this article-address concerning scientific inquiry and its theological significance, Torrance's argument is that knowledge of God and of the universe have a common source and ground beyond themselves in God's own Being and Rationality. All truth, coming from God, is essentially one, Torrance contends, and this bears importantly on *Theological and Scientific Inquiry*. An exposition of this unity of truth requires an uncovering of the basic points of interconnection between Theological and Scientific knowledge. This means particularly areas where knowledge of God and knowledge of the universe affect each other. One part of this exposition must be an account of the conception of reality implicit in the scientific mind. Theologians can encourage the practice of radical research into the deep philosophical and theological assumptions and presuppositions of contemporary science, especially those which have been operative, more or less consciously, for the last three hundred years. Ultimate beliefs underpinning scientific practice are

thus sifted and tested, and what can also be brought to light are the undefined commitments undergirding all our rational thought and scientific investigation.⁹

Science, with assistance from philosophy and theology, has been returning to a humbler and more objective view of scientific method. Reductionist, or reductivist, explanations are being shown to be unhelpful as well as untrue to the complexity of the created order. More positively, such radical research leads to the important discovery that there is a transcendent ground of order: the Love and Word of God. Such theological inquiry helps scientists to respect the need for a far-reaching *theology of nature*.¹⁰

Some of the results of this radical research into the scientists' conception of ultimate reality are thus presented by Torrance in this address. In a wide-ranging survey which has considerable overlap with the material to be found in his major texts CTST, TCFK, GGT and RST, he gives a short "theological history" of the philosophy of experimental science. This account is so relevant to the comprehension of his programme of "Theological Science" that it merits a careful, though abbreviated, and sometimes interrupted, exposition here.

A central strand of thought in this address concerns turning points in the advance of science. In Torrance's sense of the history of science in the modern (17th Century onwards) era, the appearance of experimental science was partly occasioned by the re-emergence during the Reformation of the Christian doctrine of the creation *ex nihilo* of the universe. This doctrine implied the possibility of the independent investigation of the universe in accordance with its own contingent rationality. Modern science, including Newtonian physics, was among the results of such cultural apprehensions. However, the reality of the new science, in practice, and its attendant or derivative philosophies was not a static one; science and scientific method have been constantly changing during the last three hundred years, with the philosophy of science sometimes reflecting and sometimes guiding those changes. The change has not been steady but episodic.

In Torrance's historical reconstruction, it is asserted that in the launching of modern scientific inquiry there have been four significant turning-points in the development of scientific inquiry.¹¹

⁹ TSI. Abstract. p. 2.

¹⁰ Op. Cit., p. 9.

¹¹ Op. Cit., p. 4.

1. The first turning-point is described by Torrance as a marriage between modern science and rationalism in the eighteenth century. A strictly deterministic conception of the world arose, and a dualistic science was practiced, with a closed conception of the universe and a theory of the autonomy of reason. The emphasis in scientific inquiry shifted away from the objectivity of empirical reality to the autonomous self-legislative reason. Human reason was given a “legislative role in reducing the understanding of the world of nature to a coherent mechanical system”.¹²

This was a period of narrowness in scientific inquiry. It was dogmatically restricted by a somewhat arbitrarily defined concept of mathematical reason; it claimed that human beings could or should understand and accept as real only what we have fashioned by our reason for ourselves. Torrance calls this “constructivist rationalism”. It was a damaging idea of scientific inquiry – damaging to human culture but also to the nature of science and scientific inquiry itself. To its own practitioners, naturally, this “dualistic science” (not their phrase, of course) seemed the essence of reasonableness. Indeed, it was a feature of the Age of Reason, Torrance argues. It is his contention that the “Age of Reason” was characterised by a thoroughly empiricist conception of the natural science and scientific method, with the attendant claim that “Rational Man” would now be able to illuminate the real nature of things in the universe. This would be done, according to their hope, by subjecting them to reductive analysis and mechanistic explanation. The basic concepts and theories were to be derived logically from experience. The invention of “hypotheses” was therefore not thought to be necessary or appropriate.¹³

However, the advance of science itself revealed the inadequacy of this scientific outlook: the mid-nineteenth century saw the inability of Newtonian mechanics to account for the behaviour of electromagnetism and light. A “radical questioning of hitherto accepted ideas began, with a resultant initiation of change in the ‘foundations of knowledge’”.¹⁴ This, of course, is what Torrance sees happening, or beginning to happen, at the present time.

2. The second turning point in the modern history of science is described as the Demise of Dualism. It was a shift away from an abstractive concept of science to one in which science is regarded as an extension and refinement of natural human ways of knowing. It was a shift in the foundations of science, and owes much to James Clerk Maxwell, particularly his conception of the dynamical field as an

¹² Op. Cit., p. 3.

¹³ Ibid.

¹⁴ Ibid., p. 5.

independent reality within which matter, force and field were indivisibly integrated.

The conception of scientific inquiry which was prevalent in the Newtonian era made a distinction between experimental science and theoretical science. The former was to establish the facts, the latter to explain them. This bifurcation was no longer possible when it was realised that in nature empirical and theoretical are inseparably fused together. So-called facts are “aboriginally charged with intelligible components”¹⁵, while theories have no existence apart from the inherent structure of empirical facts. Theories are not the results of unalloyed logical deduction, but of “intuitive recognition arising out of a sympathetic understanding of experience.”¹⁶

A significant part was played in the “Demise of Dualism” by the discovery or invention of Relativity Theory. It contained an “embodied mathematics”, and closed the gap between experience and mathematics in the logical structure of classical physics. Relativistic physics demolished the Newtonian cosmological synthesis, in which space and time were absolutes, infinite time and space being independent of the empirical universe. The collapse, refutation or supersession of the Newtonian cosmology invited and inaugurated a new conception of the universe – that is, a new cosmology.

[Part 2](#)

Sermon Word Total: 2,264

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¹⁵ Ibid.

¹⁶ Ibid.