

THEOLOGY AND THE NATURAL SCIENCES

THEOLOGY AND COSMOLOGY: TEILHARD REVISITED

The first of two papers exploring this topic was delivered by Robert John Russell (director, Center for Theology and the Natural Sciences at the Graduate Theological Union in Berkeley). His title was "Eschatology and Scientific Cosmology," and his overall thesis was that the Resurrection of Christ entails a transformation of the entire cosmos such that all of nature is made into the New Creation, and that consequently an event in terrestrial history can equally be an event at the end of cosmic history. His paper was divided into four sections.

The first section focused on Pierre Teilhard de Chardin's explanation of the relation between the "within" and the "without" of things. Professor Russell placed this explanation in the context of current scientific understandings of the relationship between the First and Second Laws of Thermodynamics, emphasizing that an increase in entropy in the "without" might be related to an increase in knowledge or complexity of the "within." Even if we know how much available energy is used up when we process information by thinking, that amount does not determine the content of our thoughts, only the measure of the information thereby contained. Thus the structure or content of the "within" is underdetermined by the processes of the "without."

In section two Russell outlined the thinking of scientists like Bertrand Russell and Steven Weinberg, for whom cosmology brooks little quarter for the ultimate significance of life. For them the far distant future involves either "freeze" (an open universe expanding and cooling forever) or "fry" (a closed universe recollapsing to a final black hole of infinite temperature). Section three of the paper then discussed efforts of such philosophically minded scientists as Freeman Dyson and Frank Tipler to construct what they call "physical eschatology" within the strict confines of reductionistic science. Such efforts to celebrate unending life in a cosmic perspective should strongly motivate Christians to rethink what they mean by the transfiguration of the universe through the Resurrection of Christ.

The last section dealt with Karl Rahner's eschatology, in which the Resurrection is seen as the beginning of the endtimes already occurring in history. It must therefore at least be possible, following Rahner, to construct a cosmology consistent with scientific knowledge in which the future is different from the

"freeze" or "fry" predictions of standard cosmology. The key to such a construction is an understanding of eternity not as infinitely long linear time but rather as the final mode of spiritual freedom which is the result of exercising one's freedom in time. Theologians must thus begin to insist with many cosmologists that the universe has a more complex temporal topology than that of linear time, and that living nonlinear systems can be seen as a composite of past structures even while transcending them. The final eschaton as well as our past time can thus be present to us now. Russell's conclusion was that eschatology entails a new creation out of the old, such that there is both continuity and discontinuity.

John H. Wright (Jesuit School of Theology at Berkeley) presented the second paper, entitled "The Purpose of God in Nature." Wright's aim was to extend the method of Teilhard so as to gain new insights into teleology in the universe, thereby illuminating the relationship of science and theology, the heart of which, Wright insisted, is the question of purpose.

Science deliberately and quite legitimately limits its method to what Teilhard calls the "without" of things, excluding all final causality as a source of understanding. The problem is when such a method is seen by some scientists to constitute a metaphysics and to eliminate all purpose and goal from the universe. Because such a conviction cannot be proven by scientific method, it really constitutes a leap of nonteleological faith. The question, then, is whether science is able to determine by its own method the legitimacy of raising the issue of final cause, even though science cannot resolve this issue.

Wright then pointed to a phenomenon observable in the physical world whose scientific explanation actually requires raising the question of final cause, namely human beings acting for and freely choosing between goals and purposes. For Teilhard this human phenomenon of interior self-consciousness and purpose is a function of the exterior material complexity of human brain structure. Purpose in the human phenomenon is thus the result of a certain direction that can be seen in the process as a whole, which moves from less to greater complexity and from less to greater interiority.

While Teilhard's confirmation of purpose in the universe was based on his analysis of the "without" of things, Wright wanted to emphasize another approach, based on the "within" of the human being itself as knowing subject and conscious agent. We do not create the notion of purpose but rather discover it imbedded in conscious human activity, and we do so as products of the universal evolutionary process. If, prior to the emergence of humans, purpose did not exist, could the same natural selection that produced humans bring it about? Natural causes tend to bring about certain natural results, namely to do one thing rather than another. The present disposition of things thus anticipates the future, which is the radical meaning of purpose or goal.

This is not psychological projection. We do not discover purpose in human experience and then project it on to the world around us. Rather we find in the surrounding and supporting world the conditions of the possibility of this

experience. Theology then arrives by its own method at the conviction that such all pervasive purpose points to a being that communicates this purpose, setting goals for the unfolding of the virtualities of the universe. Theology thereby provides an intelligible answer to a problem that science must raise but cannot resolve. Science provides the immediate content and theology the ultimate context, namely the horizon of ultimate meaning, without distorting any immediate meanings given by science. Hence Teilhard's insight still holds: "Religion and science are the two conjugated faces or phases of one and the same complete act of knowledge."

The discussion that followed centered first on the relationship between the phenomenon of purpose discovered in conscious human activity and the fact that such consciousness is the product of the evolutionary process. To what extent can directional tendencies found in all living things be likened to purposeful decision making at the human level? Is the latter simply a development of the former at a higher level or something so different as to have no biological precedent in the universe? The second discussion area was the relationship between religious belief in the New Creation of Christian eschatology and the "freeze" or "fry" predictions of current cosmology. To what extent can the former, which concerns the salvific activity of God directed to matter at the human level, be understood in the context of the latter? Is it the cosmos as such that is to be created anew or only the cosmos in its human form? If eternity is to be equated with the final mode of spiritual freedom, can there be any relationship at all between such freedom and the ultimate fate of the physical cosmos as now envisioned by science?

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