

SCIENCE AND THEOLOGY: FROM ORTHODOXY TO NEO-ORTHODOXY

by Kenneth Cauthen

I. ANALYSIS OF THE WARFARE BETWEEN THEOLOGY AND THE SCIENCES

The relationship between science and theology in recent centuries is a very complex one involving many dimensions and a variety of problems. At one level, the story is one of conflict between discoveries arising out of the empirical investigation of the world and the teachings of the Bible regarding such matters as the age of the earth, its location in the universe, and the origin of man. The long series of battles which make up this phase of the relations between science and theology do not need to be rehearsed here. However, a few observations may be pertinent. Sometimes this struggle has been interpreted by a picture which presents the scientists as honest, enlightened seekers after truth and the theologians as a group of blind and benighted dogmatists who oppose everything new under the sun.¹ This picture has a great deal of plausibility on the surface in that in case after case an original rejection by prominent theologians of some new scientific finding has been followed by accommodation on the part of later theologians and a reinterpretation of biblical teachings to fit newly established views. Moreover, the outcome has been a decisive demonstration that the Bible is not an authority in the natural sciences. The falsity of the world picture embodied in the Bible has been completely proven by a succession of scientists from Copernicus to Darwin. The Bible is a human book which reflects the categories of thought prevalent at the time of its writing. Whatever the proper role of theology may be and whatever its proper relationship to science, it is at least clear to us that theology has nothing to contribute directly to physics as physics, to astronomy as astronomy, to geology as geology, to biology as biology, or to any other science within the restricted scope of inquiry embraced by that discipline. In fact, modern science has been one of the decisive factors in recent cen-

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turies which has necessitated a fundamental rethinking of the meaning of revelation and of the authority of the Bible. The outcome of this revolution in theology has been the conclusion that revelation has its own proper subject matter which it is the task of theology to interpret, but it does not contain specific information about the nature and behavior of physical reality.²

In short, one of the basic lessons to be learned from the more obvious forms of the conflicts between science and theology in recent centuries is that they have arisen to a significant degree out of a failure to distinguish properly between the specific functions, subject matter, and limitations of each discipline. However, the situation is vastly more complicated than this. For if we examine the modern scientific enterprise, we discover that it has been associated with a variety of philosophical assumptions which have entered into the discussions between science and theology and complicated it tremendously. More will be said about this problem later in the paper, and the thesis will be defended that, in particular, it was the mechanistic materialism underlying modern science which raised the most serious issues for theology. What must be said now is that frequently when theologians were erroneously debating with physicists, biologists, geologists, and astronomers, they were defending not simply what we now see to be a false view of the authority of the Bible but also, even if in misguided ways, were wrestling with problems which genuinely affected the substance of Christian truth.

Real issues were at stake for those who stood in the tradition of classical Christian thought. Among these issues none was more important, especially for Protestant thinkers, than the question of the relative authority of nature and of the Bible in the determination of religious truth. Other problems had to do with the nature of man as a free and responsible creature made in the image of God, as for example in the Darwinian struggle, and the freedom and sovereignty of God in respect to the world he had created, as for example in the debates aroused by the mechanistic view of nature assumed in the views of Kepler, Galileo, Newton, and others.³ If one believes that the heart of the biblical message is true, then one must sympathize with the motives of these theologians, although at the same time recognizing their scientific error and their inadequate view of scriptural authority. But this implies, by the same token, that we must raise questions about the philosophical assumptions which may have been implicitly or explicitly associated with new scientific discoveries. The point is that the debates of the past between scientists and theologians are much more complex than a super-

ficial reading of situations might indicate, especially if attention is focused only on the fact that Christian thinkers were often found on the losing side in their arguments with Copernicus, Galileo, Lyell, Darwin, and others. It cannot be stressed too strongly that scientific-empirical, philosophical-metaphysical, and theological-existential factors have been combined in highly complex ways in the views of all the disputants in such a way that it is no simple matter to decide where good science ends and bad philosophy and theology begin and vice versa.

In this very connection it is important to notice that the conflict between science and theology has not been by any means always, perhaps not even predominantly, a struggle between scientists and theologians but has frequently been a fight between scientist and scientist and theologian and theologian. C. C. Gillispie, speaking of the debates on Genesis and geology in England during the nineteenth century, refers to the "quasi-theological frame of mind within science,"⁴ and notes that "during the seven decades between the birth of modern geology and the publication of *On the Origin of Species*, the difficulty as reflected in scientific literature appears to be one of religion . . . in science rather than one of religion *versus* science. The most embarrassing obstacles faced by the new sciences were cast up by the curious providential materialism of the scientists themselves and of those who relied upon them to show that the materials of a material universe exhibit the sort of necessity which results from control instead of the sort which springs from self-sufficiency."⁵ Gillispie further says, "Although too neat a generalization would be erroneous, the arguments of one generation of purely theological disputants more or less reflected the interpretation of the obstructionist side in the discussions among scientists of the preceding generation."⁶ If we look at the dispute aroused by Darwin, we discover that the theologians were divided between the fundamentalists and the modernists, the former of which rejected and the latter of which accepted the evolutionary account of the origin of man. In short, the internal conflicts within the disciplines of science and theology have frequently been as fierce as those between the two communities. This means that one cannot talk very long about the subject without referring to specific scientists and theologians within a given context and with respect to a particular problem in dispute.

In the light of the complicating factors which have entered into the discussions between science and theology in recent centuries, we must agree that what Gillispie says about the history of science and religion in England in the years preceding Darwin holds for the entire modern period. Says Gillispie: "Contemporary scientific literature of the years before 1850 or thereabouts makes it immediately apparent that neither

the conflict between religion and science, as later held by John W. Draper, nor even that between theology and science, as set out in the classic account by Andrew D. White, was the simple, universal, black-and-white affair that it seemed in the optimistic perspective of the late nineteenth-century positivist rationalism."⁷ The recent work by John Dillenberger, *Protestant Thought and Natural Science*, is significant in that it helps to provide the kind of balance that is needed.

One further point needs to be made in this connection. Science and theology, along with philosophy which is intimately related to both, all undergo a constant process of change and development, so that hardly any one of us would find it possible to identify ourselves completely with the ideas, concepts, and perspectives employed in any of these disciplines at some previous stage in the conversation. All language systems are historically and culturally conditioned and are, therefore, relative to the time and place of the interpreter. This means that the outlook of a given scientist or theologian from the past cannot be brought intact over into our age without qualification, correction, and restatement. Moreover, this process of seeking solutions for scientific and theological problems goes on in our time without having achieved finality, and, therefore, we must be on guard against absolutizing our own views. Perhaps this warning is unnecessary, for there is no unanimity today with regard to the scope, limitations, and interrelations of science, philosophy, and theology and of the status and significance of the theoretical constructs and language systems employed in each area. The analytical philosophers in recent years have reminded us sharply of the importance of clarity at this very point and have taken it as their task to provide just this kind of analysis of the meaning and use of language in the various contexts in which it is employed by scientists, philosophers, and theologians. The lack of a rigorous analysis of the language systems of science and theology and of the connections and distinctions between them has been in the past a source of much confusion and unnecessary conflict. It may be hoped that the attention that is now being given to the various usages of language may further clarify the relations between science and theology and thus reduce, if not completely eliminate, the bitterness which has so often attended the discussions of the past.

II. THE THREAT OF SCIENCE TO HUMAN MEANING IN COSMIC CONTEXT

What has been said up to this point is that even if one considers the relations between science and theology in terms of the conflicts between specific empirical discoveries and the teachings of the Bible, the situa-

tion becomes extremely complicated due to the interrelationship between the scientific-empirical, philosophical-metaphysical, and theological-revelational factors which were associated with the views of the disputants. Thus, the consideration of the more obvious forms of the contacts between science and theology leads us into the deeper questions which are of much greater significance than the debates about particular matters of fact. Attention must be turned directly to what seems to be the basic and still unsolved issue which modern science has raised for theology. Specifically, the attempt will be to set forth the nature of this issue and the main line of the theological response to it with particular reference to present-day thought. By way of conclusion, an effort will be made to point to a viable alternative which is open to theology in our day.

It is a well-recognized fact among historians that the Western world underwent a spiritual revolution of far-reaching significance roughly during the years between 1500 and 1700, that is, during the span of time which encompasses the period from Copernicus to Newton. Modern science was intimately bound up with this revolution and was at the same time both "the root and the fruit of it."⁸ This development radically transformed man's way of conceiving his place in the total scheme of things and raised profound questions about the meaning of human life in the context of a vast universe of material particles moving in mechanical fashion in obedience to inexorable law. This story has been told often in recent years by Alfred North Whitehead,⁹ E. A. Burtt,¹⁰ Alexandre Koyré,¹¹ and many others and can only be described here in the very briefest of terms. Koyré puts the heart of the matter succinctly:

This scientific and philosophical revolution . . . can be described roughly as bringing forth the destruction of the Cosmos, that is, the disappearance, from philosophically and scientifically valid concepts, of the conception of the world as a finite, closed, and hierarchically ordered whole (a whole in which the hierarchy of value determined the hierarchy and structure of being, rising from the dark, heavy and imperfect earth to the higher and higher perfection of the stars and heavenly spheres), and its replacement by an indefinite and even infinite universe which is bound together by the identity of its fundamental components and laws, and in which all these components are placed on the same level of being. This, in turn, implies the discarding by scientific thought of all considerations based on value-concepts, such as perfection, harmony, meaning and aim, and finally the utter devaluation of being, the divorce of the world of value and the world of facts."¹²

In the medieval period, man and the earth on which he lived were thought to be in the center of the universe. Surrounding the earth were

the spheres of the planets, the sun, and the stars and, finally, the eternal dwelling place of God. The world was teleologically ordered in such a way that the whole was regarded as a system of purposes. Stones fell to the earth because they realized their proper end by finding their way to their proper place at the center of the earth. This was a neat, ordered, purposeful world in which man was the crown of creation and the earth the stage on which the drama of redemption portrayed in the Bible was acted out. Man seemed secure as the benefactor of divine grace in a world made for his specific benefit. The revolution described above by Koyré changed all that. In the new view that emerged, man and the earth were not in the center of a finite cosmos but an infinitesimal speck in an unimaginably vast, if not infinite, universe. The world was no longer a system of purposes but bits of matter in aimless motion.

While the loss of man's place at the center of the world, the disruption of the identity between the hierarchy of space and the hierarchy of value, and the subjection of man to the anxiety of infinity were serious blows to man's self-esteem and to his search for meaning, it was the mechanistic and materialistic view of the world implied in seventeenth-century science that posed the greatest difficulty. Whitehead put his finger on the heart of the matter when he pointed out that there persists throughout the last three centuries "the fixed scientific cosmology which presupposes the ultimate fact of an irreducible brute matter, or material, spread throughout space in a flux of configurations. In itself such a material is senseless, valueless, and purposeless. It does just what it does do, following a fixed routine imposed by external relations which do not spring from the nature of its being. It is this assumption that I call 'scientific materialism.'"¹³ In this outlook, says Whitehead, "Nature is a dull affair, soundless, scentless, colorless; merely the endless hurrying of material, endlessly, meaninglessly."¹⁴ The outcome of this scientific materialism has been a stark contradiction in the thinking of the modern world. Whitehead writes:

A scientific realism, based on mechanism, is conjoined with an unwavering belief in the world of men and of the higher animal as being composed of self-determining organisms. This radical inconsistency at the basis of modern thought accounts for much that is half-hearted and wavering in our civilization. . . . For instance, the enterprises produced by the individualistic energy of the European peoples presuppose physical actions directed to final causes. But the science which is employed in their development is based on a philosophy which asserts that physical causation is supreme and which disjoins the physical cause from the final end. It is not popular to dwell on the absolute contradiction here involved. It is the fact however you glose it over with phrases.¹⁵

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Here, then, is the underlying cosmology of the modern scientific enterprise—a world of dead matter, void of freedom and purpose, and indifferent to the values of men. This mechanistic materialism has raised the problem which constitutes the area of the most crucial conflict between science and theology in modern times.

It would be a gross oversimplification to insist that the whole of modern thought has centered on this issue or that all thinkers have seen in the philosophical implications of science the dire threat to religion that has been posed here. There are many currents of thought and a variety of ways of interpreting the basic philosophical issues in a given cultural epoch. Indeed, many of the scientists and philosophers who formulated this cosmology were devout men of faith, although not always orthodox Christians, who saw a manifestation of divine wisdom in the world machine and moved with awe from nature to a contemplation of nature's God. Moreover, many simply ignored the mechanistic outlook. Nevertheless, the history of modern philosophy can be read to a significant degree as an attempt to find a place for spiritual values in a world of material facts.¹⁶

Given the philosophy of mechanistic materialism as the metaphysical foundation of modern science, the basic problem has been to relate mind with its freedom and values to matter with its determinism and purposeless mechanism. Beyond that there is, of course, the other question concerning the ultimate significance of man as an infinitesimal speck of dust in a vast universe. A whole succession of great thinkers from Descartes on has engaged in an earnest effort to find a place for the high claims of the human spirit in the total scheme of things. Indeed, the problem of the meaning of life in its cosmic context is still with us, even if one agrees with Whitehead that the new science of the twentieth century has completely undermined the older scientific materialism, thus making it possible at least to consider some such reconstruction as Whitehead has himself proposed. Karl Heim has spoken in recent years of "the shock administered to belief by the contemporary scientific picture of the physical universe."¹⁷ He has posed the problem anew in radically disturbing terms, and this in the days of Einstein and not of Galileo and Newton.

III. THE THEOLOGICAL RESPONSE AND THE ROLE OF KANT

It is time now to turn to the theological response to the problems posed by modern science, with particular reference to the question of the place of freedom, moral values, and religious faith in a world interpreted by science in terms of deterministic, mechanistic materialism.

This, too, is a tremendously complex history and has many facets. Here it will be possible only to touch briefly on some phases of the theological response which has been characteristic of the liberal and neo-orthodox theologies of the nineteenth and twentieth centuries.

In the Bible, God reveals himself to men in a unique way through a series of decisive events in the history of Israel and in the life of Jesus. Again and again the redemptive activity of God involves the miraculous, as, for example, in the incidents associated with the exodus in the Old Testament and in the virgin birth and resurrection of Jesus. Moreover, the cross and resurrection are events which have cosmic implications in that by them the demonic forces which hold men in bondage are overcome. The Bible, then, is the book which recites the mighty acts of God in nature and history by which God is revealed and man is redeemed. Christian orthodoxy has interpreted the biblical witness in more or less literal terms and without any sense of difficulty. Modern theology in its liberal and postliberal forms, however, runs into a very complicated problem in this regard because it has had to find a way to relate the biblical affirmation that God is purposefully active in nature and history to the scientific understanding of the world. This cosmology, as already indicated, allows no breaks in the normal sequence of cause and effect and therefore calls into serious question the possibility of miracles or any purposeful activity of God which would interfere with the causal nexus. The tension between the outlook of modern science and the world view of the Bible is the source of the fundamental epistemological and metaphysical questions which modern theology has had to face. It remains as a continuing problem for both liberal and postliberal Christian thought.

There have been many impressive attempts among both theologians and philosophers to speak meaningfully of man's moral and spiritual quest within the context provided by a mechanistic interpretation of nature. However, it has been Kant and his idealistic successors who have helped theology most to speak both of the physical world as science described it and of the claims of the human spirit. The foremost effort of the theological enterprise to get freedom and moral values back into the world has been based on some version of the Kantian distinction between pure and practical reason. This procedure leaves the external processes of nature and history to empirical science and looks to the moral and spiritual self, which is said somehow to transcend nature, for a basis for religious faith. Kant, however, was able to make room for faith only by restricting theoretical reason to the organization of phenomena, that is, to reality as it appears to our senses. This under-

mines the traditional arguments for the existence of God and makes metaphysics and natural theology impossible. But it did provide Kant a way of accounting for and dealing with the mechanistic and deterministic principles embodied in Newtonian physics, and, at the same time, of avoiding the metaphysical materialism which they seemed to imply. This he did by asserting that science deals only with phenomena and tells us nothing about the way reality is in itself. Then he proceeded to the operations of the practical reason and found that, on the basis of the universal and necessary principle of moral obligation, he had to postulate freedom, God, and immortality. By his Copernican revolution in thought, Kant became the philosophical father of modern theology but at the expense of removing God from consideration by theoretical reason and of perpetuating his own version of the bifurcation of spirit with its freedom from nature with its necessities. By so doing, he divorced God from any religiously meaningful relationship to the physical world and left him altogether as a necessity of a moral self, thought of as somehow transcendent to nature. It is not at all clear that the influence of Kant on theology has been altogether salutary or that theology has yet moved beyond either his positive or his negative contributions.

The nineteenth century produced a number of protests that science had left out the most important realities of the spirit. During this period there was great emphasis on the inner life, on feeling and intuition. The belief was that whatever science might say about the external world, there is a sure foundation for religious faith in the moral and spiritual consciousness. The romantic movement in literature was a part of this protest on behalf of value.¹⁸ This effort to distinguish between the external mechanistic world and the inner spiritual world is typical of the nineteenth-century liberal reconstruction of theology. It is evidenced in the distinctions made in Kantian fashion by a number of thinkers between understanding and reason (Coleridge), the natural and the supernatural (Bushnell), the sensuous consciousness and the higher religious consciousness (Schleiermacher), and nature and moral personality (Ritschl). After Kant, various kinds of metaphysical idealism emerged which asserted that the really real is mind or spirit and that the world described by science is the phenomenal manifestation or expression of an all-embracing mind (absolute idealism) or the product of the activity of a Cosmic Person (personalism). In this way, the threat of mechanistic determinism implied in the scientific movement was overcome by robbing the world of nature of independent reality.

In short, liberal theologians, generally speaking, sought for a basis

for religious faith either by looking to the moral consciousness, feeling, and intuition (Kant and the romanticists), or by reducing nature to the status of phenomena and stressing the priority of creative and purposive mind (Kant and the idealists), or by combining these approaches in various ways. In addition, the doctrine of divine immanence prompted attempts to find God meaningfully at work in the lawful processes of nature. Many theologians found in evolution evidence of cosmic purpose which was gradually producing new and higher levels of being and progressively establishing a kingdom of love and brotherhood among men. These factors contributed toward the validation of a spiritual interpretation of reality. In the twentieth century, some liberal thinkers turned to pragmatism, process philosophy, naturalism, and still later to existentialism, all of which have their own ways of dealing with the scientific view of the world. However, some version of Kantian philosophy or of post-Kantian idealism has dominated the liberal theological reaction to scientific materialism, especially in its nineteenth-century varieties.

Liberal theologians were convinced of the basic harmony between reason and experience, on the one hand, and the biblical revelation, on the other hand. This belief grew out of, and is intimately bound up with, the emphasis on the immanence of God. Hence, once a method had been found to make a place for spiritual values in the world, despite the materialistic implications of science, the way was open to find a point of contact with biblical religion. The basic principle was that the primary source of religious knowledge is to be found in moral and spiritual experience. The next step was to insist that the Bible itself is nothing more than a record of the religious experience of the Hebrew people and of Jesus of Nazareth, whose consciousness of God represents the apex of man's religious pilgrimage. The Bible, then, is authoritative for modern men because of its intrinsic worth as the depository of the world's most sublime moral and religious teachings. This means that the religious truth of the Bible can be confirmed and validated in man's present personal experience of God and of moral value. Thus, while it was frankly recognized that the Bible is a fallible, human book whose categories are relative to the time and place of its writing, it was affirmed that in these outmoded categories there is contained a permanently valid witness to abiding moral ideals and religious truths which are normative for all men everywhere. In this way, biblical revelation and human experience were harmoniously correlated.¹⁹

The twentieth century has brought new directions in both science and theology. Newtonian science and liberal theology have given way

to, or at least been considerably modified by, quite complicated successors. Recent theological reflection of the neo-orthodox variety has stressed the sovereignty and transcendence of God rather than his immanence, the radical and universal sinfulness of man rather than his basic goodness and perfectibility, the divine Christ rather than the historical Jesus, the priority and centrality of biblical revelation rather than the authority of religious experience, the moral ambiguity of history rather than the movement of man toward the kingdom of God on earth, and the tension between faith and reason rather than their harmony, and so on.²⁰ But despite these basic shifts in emphasis, contemporary theologians generally share with liberal thinkers the conviction that finite reality (nature and history) is a dynamic causal network and, as far as objective study can determine, wholly explainable in immanent terms. Miracles are highly suspect, if not ruled out altogether. This is simply to say that recent thought has inherited a similar problem to that with which the liberals struggled. Moreover, neo-orthodox thinkers continue to follow the same basic pattern in dealing with the issues raised by modern science as did the liberal thinkers, although the theological framework is considerably different in each case.

Let us examine the situation briefly. No themes are more prominent in neo-orthodox theology than (1) the sovereignty and transcendence of God and (2) the mighty acts of God in the history of Israel and in the event of Jesus Christ whereby God is revealed and man is redeemed. However, the acceptance by contemporary theologians of the view that the world is a system which exhibits an unbroken causal order raises the problem which W. E. Hocking calls the dilemma of the modern mind with respect to the idea of God. On the one hand, "God must act." On the other hand, "God must not intrude into the causal sequences which concern the natural sciences."²¹ Thus, when contemporary theologians speak of the transcendence of God and of his mighty acts, there is little intention to revive a preliberal kind of supernaturalism. There is indeed a divine order, which transcends the world that science can study, but it remains hidden from ordinary human view. To speak of God acting in nature and history tends to mean that the divine order touches the visible order at its limits without disturbing its regularities, or it may involve the transformation of all references in the Bible to supernatural existence and divine activity into existential meaning.

What this means is that the mighty acts of God are not simply and directly identical with what we ordinarily think of as events in nature or history. Contemporary theological usage does not equate the history

in which God acts with the observable, public occurrences that can be recorded by the scientist or historian. Rather, God performs his wondrous works in *Heilsgeschichte* or sacred history. This does not imply, however, that we should look for events that are somehow unique or spectacular in themselves as visible happenings but that events in nature and history belonging to the immanent causal order may take on a new dimension of being and meaning for the eye of faith. The interpretation of sacred history is not self-evident but is rather the content of a revelation which must be appropriated in personal encounter by an existential decision which transcends theoretical validation. Only the community of believers finds God at work in the crucial occurrences of the exodus and in the life of Jesus. Thus, there is a sharp discontinuity between the ordinary history open to public inspection by the empirical scientist or critical historian and the sacred history knowable only to faith.

These issues have been dealt with in highly complex ways and from a variety of perspectives in recent theology, and it is difficult to make general statements without grossly oversimplifying the matter or doing violence to individual thinkers. Generally speaking, however, two approaches may be specified. Some thinkers speak of the revelatory and redemptive history to which the Bible witnesses as one series of events which can be viewed either from the perspective of the objective inquiries of scientists and historians or from the point of view of the existential meaning of these same occurrences for faith. H. Richard Niebuhr's distinction between "external history" and "internal history" and Rudolf Bultmann's distinction between *Historie* and *Geschichte* illustrate this double way of seeing the same event. For neither of these men do the revelatory events of the Bible involve any supernatural interference with the observable processes of nature. Rather, revelation has to do with the personal meaning the believer finds in these events which transforms his understanding of his existence as a moral self.

Other contemporary thinkers, like Karl Barth and Emil Brunner, are in some respects closer to a kind of supernaturalism in that they seem to speak of two orders of reality, one of which is open to the dispassionate observer while the other is disclosed by revelation and known only by faith. Barth, in his early career, for example, suggested that the incarnation touched the visible world as a tangent touches a circle. The contemporary Barth is a complex case in that he does speak of the virgin birth and the empty tomb as signs of the inbreaking of God in Christ, and these would not seem to be explainable in ordinary causal terms. But it is not clear to what extent he means that scientists exam-

ining the evidence of these signs could detect the presence of miracle. Brunner maintains that the resurrection of Jesus is not an event in observable history but an occurrence in sacred history, which transcends the natural order by being above it. He indicates that the deity of Christ is hidden so that the secular historian could find no evidences of the presence of God in him. In this perspective, the phenomenal order seems to be a veil behind which the divine realm resides hidden, except to the eye of faith.

While this examination of contemporary theology has necessarily been sketchy and by no means inclusive of all present-day perspectives, the point to be stressed here is that a wide segment of the main line of recent Protestant theology has continued to work out its response to the scientific view of the world along the lines suggested by Kant.²² Generally speaking, the neo-orthodox view is that saving religious truth is not to be discovered by theoretical reason in any of its operations but by decision of faith in response to a personal encounter with God mediated by means of a unique, special revelation in the events of sacred history. One can see clearly here a dualistic tendency which leaves the external processes of nature and history to the objective investigations of scientists and the historians, and looks to the moral and spiritual encounters of the self and its existential decisions for a basis for religious faith. This procedure distinguishes between the realms with which science and theology deal and is dependent on the functions and limits which Kant assigned respectively to the operations of the theoretical and practical reason. It does not require much imagination to see the connection between what has here been referred to as ordinary history and the phenomenal realm to which Kant limited the theoretical reason. Likewise, sacred history as the context in which God is disclosed to faith in personal encounter is related to the realm and the function which Kant assigned to the practical reason by which the self as a free spiritual agent is able to gain assurance of the reality of God on the basis of internally felt moral obligation.

The Kantian influence can also be seen in the metaphysical skepticism and in the absence of any positive concern with natural theology, which are so characteristic of neo-orthodoxy. There has been little direct and sustained discussion among these theologians, with a few notable exceptions such as Karl Heim, with the natural sciences and with the possible theological implications of recent developments in the understanding of the physical world. This would seem to be due partly to the fact that neo-orthodoxy has been primarily concerned with the understanding and interpretation of revelation. Moreover, it has distin-

guished, as already noted, between the areas of inquiry with which science and theology deal. This lack of direct concern with science is also related to the existentialist influence in recent theology which has resulted in a stress on the basic subjectivity of man and in a concentration of the inner anxieties, decisions, commitments, and evaluations of the self in its search for personal meaning and fulfilment. In this perspective, science is seen as an impersonal discipline which deals with its data as things and is concerned with I-it relationships. If science treats man, it must make him into an object, and thus it obscures his being as a thinking, feeling, willing subject who transcends all objectifying descriptions. Theology, on the other hand, deals with persons, with I-thou relationships, and focuses precisely on the subjectivity of the inner self which forever eludes science.²³ Here, too, the Kantian influence is present, for existentialism has developed in its own unique way a view which stresses the primacy of the practical reason.

It should be pointed out, however, that recent theology is not as bothered by the threat of scientific determinism and materialism as were earlier generations of philosophers and theologians. This is not only because a Kantian way of dealing with science has been appropriated but also because recent theologians are alert enough to the wider culture to know that science itself has undergone significant changes which have altered the terms of the conversation between them. The idea that the principles of Newtonian science are final and immutable has long ago gone by the board. Present-day physics no longer seems to imply a materialistic metaphysics or to require an absolute determinism. Indeed, there is a widespread questioning among scientists as to just what the equations, symbols, formulas, maps, and models employed by them actually do imply as far as reality is concerned. A skeptical and positivistic attitude is widespread in the scientific community which doubts the possibility of describing nature as it really is or of deriving a picture of reality from the results of scientific inquiry.

Clearly enough a new era has arrived in the relations between science and theology, and it is not apparent what forms future conversations may take. We seem to be in a period of transition in which the scientific and theological communities have concentrated on their respective disciplines. Each has been engaged in a process of examining the methods, the language, the foundations, the functions, and the limits of its own enterprise. Perhaps Dillenberger is right that the time is not yet ripe for new alliances and grand over-all schemes of integrating the two.²⁴ It does seem to be true, however, that there are possibili-

ties of more positive relationships than have prevailed at some times in the past.

IV. THE NEED NOW FOR A NEW KANT

By way of conclusion, perhaps a theologian may be allowed a suggestion as to the direction theology might move in the future with respect to its relationship to the scientific enterprise. Despite the demise of the older science with its materialistic implications, the mainstream of contemporary ecumenical Protestant thought has not given sustained attention to a rethinking of the relationship of God to nature in the light of newer developments. Although the sovereignty of God over the whole creation and the goodness of the physical world are vigorously proclaimed, neo-orthodoxy speaks of the presence of God in nature primarily in terms of his paradoxical hiddenness. Attention has been concentrated on the practical reason, on the decisions and commitments of the self in response to the special revelation of God in sacred history. The theme of the mighty acts of God in history has been central, but there is difficulty in seeing just how faith's grasp of these mighty divine deeds is to be correlated with theoretical reason's view of the world or, to say it differently, how sacred history is related to ordinary history and to nature. The neo-orthodox theologians who want most to speak of the mighty acts of a sovereign lord and of a theology of revelation which looks to events in nature and history for the divine disclosure have real problems in specifying just *what God really does in the events themselves*.²⁵ The tendency is to begin by using language which seems to point to objective occurrences in the realms of nature and history but to conclude by focusing attention on what happens in the internal life of the believing self. The statement that *God acts* in a special way comes to mean that *faith sees* a unique meaning in certain events. But what is the relationship between what *God does* and what *faith sees*? One may venture the opinion that, until theology finds a better way of dealing with these matters than that provided by Kant, it will always find it difficult to avoid the proposition that truth is subjectivity. This doctrine, when associated with an insistence on the transcendence of God, inevitably involves theology in antinomy, paradox, and a sharp tension between faith and reason. Langdon Gilkey, in an important article, has recently stated that we cannot specify how God acts in special ways apart from some understanding of how God acts in ordinary events. This, as Gilkey indicates, calls for renewed attention to the problems of cosmology.²⁶ Some over-all vision of the nature of finite reality is called for which

can help us understand the meaning of God's creative and redemptive work in the cosmos as a whole.

In the light of all this, it is at least permissible to raise the question as to whether process philosophy may not offer theology more help in this regard than has yet been generally recognized.²⁷ What is needed, it seems to this writer, is an orientation which looks to the created order itself for some evidence of cosmic purpose and activity. The facts of emergent evolution and the philosophy of organism suggested by Whitehead are worth investigation as a means of developing a philosophy of nature which relates the biblical witness to a contemporary understanding of the world. The point here is that Whitehead enables us to see all events in nature as an effort to realize value. This provides a framework in which meaning and purpose are discovered in every aspect of God's created world. In such a teleological view of the cosmos one can see God meaningfully at work in ordinary events in nature and in every realization of human good in history.²⁸

The development of such a philosophy would not provide a complete natural theology or make revelation unnecessary. If there is one lesson that should be learned from the fact of historical relativity and human finiteness, it is that all affirmations about ultimates proceed from faith commitments which transcend rational demonstration. The priority of faith in response to the special revelation of God in Jesus Christ is a first premise of any sound theology. What a new philosophy of nature might do is to make it possible at least to locate a point of contact that would bring together faith's grasp of God's redemptive activity and reason's discovery of purpose and value in the dynamic processes of the world. The revelation of God in Christ might at least be made more credible to the critical reason, and the teleological processes of nature might be clarified and set in a larger, total context by such a correlation.

The kind of approach only hinted at here is also beset with problems, the most obvious one being the problem of evil. If reason takes instances of seeming teleology in nature and history as evidence of cosmic purpose, it must also deal with seeming instances of dysteleology as well. The priority of faith and the difficulty of harmonizing faith with reason are never more vivid than at this point. What is announced here is a proposal to be investigated, not the conclusion of a theological program. However, the New Testament focus on the death and resurrection of Jesus as the disclosure of the divine nature would seem to provide help in this point if this is interpreted to mean that the sovereign power which creates and redeems the world is nothing other

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than suffering and triumphant love which struggles at all times and places to bring each and every creature that exists to its fulfilment. God is the fellow-sufferer who bears the agony of evil and the guilt of sin in his own heart, and triumphs in every realization of good, and preserves in his own being every achievement of value.

Moreover, the doctrine of creation would seem to offer encouragement for the attempt of reason to find adumbrations of the divine activity and purpose in the world that God has made. The evidence of God's love offered at Calvary grasped by faith must not ultimately be in conflict with the evidence offered by the course of events in nature and history taken as a whole. It is to be expected that one line of evidence should point to the other in terms of mutual support, if it be true that the Son of God who sacrificed himself for the sins of the world (John 3:16) is also the Logos through whom the world was created (John 1:1) and if the Redeemer is also the Creator. This would seem to be the final theological vindication of the attempt to see science, philosophy, and theology as allied enterprises which view God's world at different but complementary levels of inclusiveness and significance.

Kant has served theology for a long time, and perhaps no one could have served better as long as a mechanistic science prevailed. But the foundations of that outlook have been undermined. What is needed now is a comprehensive view of the nature of nature which can do for Einstein what Kant did for Newton. Karl Heim has argued impressively that theology must come to terms with the shock administered to belief by the contemporary scientific picture of the world, and has offered one possible line of approach that Christian thought might take. But whether one looks to Whitehead or Heim or to some other alternative, it is clear that one of the most urgently needed conversations today is with the natural scientists. Nothing less than full-scale confrontation with the over-all issues of cosmology and ontology will suffice.²⁹ Mere refinements in epistemology cannot meet the demands of the problem. Moreover, the interpretation of history cannot be separated from an interpretation of nature. Such inquiry is demanded by the biblical witness itself which testifies to the mighty acts of God in nature and history.³⁰

NOTES

1. The classic histories of this conflict are John William Draper, *History of the Conflict between Religion and Science* (New York: D. Appleton & Co., 1875); and Andrew Dickson White, *A History of the Warfare of Science with Theology in*

Christendom (New York: D. Appleton & Co., 1896). Draper sees the conflict between science and religion, the former being dogmatic and static and the latter open-minded and progressive (pp. vi-vii). White sees the battle not with religion as such but with theology, but he views the latter as having been reactionary and intolerant.

2. See John Baillie, *The Idea of Revelation in Recent Thought* (New York: Columbia University Press, 1956).

3. See John Dillenberger, *Protestant Thought and Natural Science* (Garden City, N.Y.: Doubleday & Company, 1960).

4. *Genesis and Geology* (New York: Harper & Bros. [Harper Torchbook], 1959), p. x.

5. *Ibid.*, p. ix.

6. *Ibid.*, pp. 223-24.

7. *Ibid.*, p. viii.

8. Alexandre Koyré, *From the Closed World to the Infinite Universe* (New York: Harper & Bros. [Harper Torchbook], 1958), p. 3.

9. *Science and the Modern World* (New York: Macmillan Co., 1925). This work has been reissued in a Mentor book published by the New American Library of World Literature, Inc., first printing 1948. The references in this paper are to this reprint.

10. *The Metaphysical Foundations of Modern Science* (Garden City, N.Y.: Doubleday & Co., no date). Published originally in 1924 by the Humanities Press and reissued recently as a Doubleday Anchor book.

11. See n. 8.

12. Koyré, *op. cit.*, p. 4.

13. Whitehead, *op. cit.*, p. 18.

14. *Ibid.*, p. 56.

15. *Ibid.*, pp. 76-77.

16. W. T. Jones, *A History of Western Philosophy* (New York: Harcourt, Brace & Co., 1952), pp. 527-31, 631-34. See also Burt, *op. cit.*, pp. 15-35.

17. *Christian Faith and Natural Science* (New York: Harper & Bros. [Harper Torchbook], 1953), p. 11.

18. Cf. Whitehead, *op. cit.*, chap. v.

19. For a comprehensive account of liberal theology in its leading American varieties, see Kenneth Cauthen, *The Impact of American Religious Liberalism* (New York: Harper & Row, 1962). The last four paragraphs are based on this analysis.

20. For a brief discussion of these recent trends, see Cauthen, *ibid.*, chap. xii. Much of the material in the remainder of Section III of this paper is taken from that chapter, where full documentation will be found.

21. Hocking, *Science and the Idea of God* (Chapel Hill: University of North Carolina Press, 1944), p. 22.

22. For an important analysis of the *Heilsgeschichte* theme in contemporary theology and for documentation of the Kantian influence in both liberal and post-liberal Protestant thought, see Richard R. Niebuhr, *Resurrection and Historical Reason* (New York: Charles Scribner's Sons, 1957), especially chaps. iii and iv. Many of the issues discussed in this section of the present paper are illuminated by Niebuhr's presentation.

23. Cf. Dillenberger, *op. cit.*, pp. 264-69.

24. *Ibid.*, pp. 255-56, 292. See chaps. ix and x for a helpful discussion of recent directions in science and theology and of the present status and prospects of the continuing conversation between them.

25. This difficulty must not be overdone. H. Richard Niebuhr has been both clear and cogent in spelling this out. His radical monotheism makes it clear that it is just the history in which men live, struggle, suffer, and die that God rules and in which he accomplishes his sovereign purpose of redemption. Moreover, he makes it clear that the distinction between internal and external history involves a double way

of viewing what is but one reality. Nevertheless, he also makes it clear that the affirmation of God's goodness and sovereignty is a testimony of the moral self in its practical search for meaning and not metaphysical statements by a detached mind engaged in a neutral description of reality. It is just at this point that I have my continuing difficulty with his profound, illuminating, and cogent presentation. Can the practical and theoretical, the existential and the metaphysical, facets of inquiry be distinguished in the way that he does? See *The Meaning of Revelation* (New York: Macmillan Co., 1941); *Christ and Culture* (New York: Harper & Bros., 1951); and *Radical Monotheism and Western Culture* (New York: Harper & Bros., 1960).

26. "Cosmology, Ontology, and the Travail of Biblical Language," *Journal of Religion* (July, 1961).

27. A number of men in recent years have made similar suggestions, including Nels Ferré, Daniel Day Williams, Bernard Loomer, Bernard Meland, John Hayward, Schubert Ogden, and John Cobb. Practically all of these men have had close associations with the University of Chicago. It remains to be seen how far process philosophy can attract interest beyond this particular center of graduate training in theology.

28. Kelvin Van Nuys, *Science and Cosmic Purpose* (New York: Harper & Bros., 1949), is an example of the approach that is being suggested.

29. I must confess, however, that I feel strongly the tension between those who argue that metaphysics is impossible and those who argue that metaphysics is necessary and inescapable. Thus, I am alternately convinced and unconvinced of the adequacy of a position like that of H. Richard Niebuhr and Rudolf Bultmann which focuses on the existential meaning of the biblical revelation and foregoes any attempts to establish a theoretical metaphysical framework for interpreting the Gospel for our age. At the moment, I lean toward the view that theology must take seriously both the subjective and the objective, the existential and the metaphysical, the practical and the theoretical, sides of the issues involving God's relationship to the world and man's quest for meaning and fulfilment.

30. Since this article was originally written, the influence of neo-orthodoxy has increasingly declined under the impact of the later Bonhoeffer and with the rise to prominence of the "death of God" theology. As a result, the most crucial question for contemporary theology is the meaning of God for secular man. Therefore, were I writing this article now I would devote less attention to the weaknesses of neo-orthodoxy and speak more to the problems raised by the Christian atheists—Van Buren, Hamilton, and Altizer. But this subject requires separate treatment beyond the scope of this essay.