

# CAN NATURE TRULY BE OUR FRIEND?

by Philip Hefner

*Abstract.* The question of whether nature can embody love or be considered in this sense as “friend” is a thorny problem for Christian theology. The doctrines of finitude and sin argue against nature as a realm of love, whereas the doctrine of creation out of nothing, which links God and the creation so forcefully, would seem to argue for such a view of nature. This paper explores the thesis that Western culture has not offered a concept of nature rich enough to allow for an understanding of it as a domain of graciousness. From pre-Socratic times through the Enlightenment and the rise of modern science, nature was conceived of as a realm of defect or lacking in creative possibilities. Christian theology has consistently spoken of nature in terms that defy the limitations of the authorized views proposed by the ambient Western cultures. The present times, under the influence of the sciences, have furnished for the first time an authorized concept of nature that is large enough and dynamic enough to entertain the dimension of grace. Consequently, ours is a time of great promise for developing a more adequate theology of nature.

*Keywords:* Chalcedon; R. G. Collingwood; creation out of nothing; finite is capable of the infinite; incarnation; love; means of grace; nature; sacrament; Timaeus.

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## NATURE AND ITS FRIENDSHIP DEFINED

The theme that I have chosen may be one of the most difficult that faces the theologian. Can nature truly be friend to us who are human beings? To raise this question is to up the ante to a very high level, because, as the closing portions of Langdon Gilkey’s reflections remind us, the problems raised in the question are so thorny and

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the prospects of resolving them so slim. And yet the question has a definite "The emperor has no clothes" import to it. God, as the major Western religions have conceptualized God, has very little credibility if we cannot in some sense say that the nature God created, including the nature that is us, is our friend. To pose this question is to ask whether it is possible to conceive of love as the fundamental principle of nature. In what follows I will probe just that thesis, that nature can indeed be construed as grounded in love.

Both nature and love are terms that are often used imprecisely, with the consequence that they can mean everything and therefore also nothing. I will try to specify what I mean with these terms by offering at least initial definitions. The philosopher R. G. Collingwood calls our attention to two basic ways in which the term *nature* is used. The first, which Collingwood believes is the more classical, speaks of "something within, or intimately belonging to, a thing, which is the source of its behaviour" (1945, 44). The focus in this usage is upon the fundamental principle or intentionality of nature. The second refers to "the sum total or aggregate of natural things" (1960, 44) and therefore is a synonym for cosmos. From time to time in this article, I will employ both of these meanings. I take my concept of nature as cosmos from neurobiologist Roger Sperry, who speaks of nature as "a tremendously complex concept that includes all the immutable and emergent forces of cosmic causation that control everything from high-energy subnuclear particles to galaxies, not forgetting the causal properties that govern brain function and behavior at individual, interpersonal, and social levels" (Sperry 1983, 114). Nature is the reality system in which we have emerged and in which we now live, including its past history and its future, what is visible and known to us, as well as what is unknown now and what may well be forever unknowable.

To use love as the key to understanding nature would mean that *the reality system of nature in which we live is itself an ambience in which we truly belong, an ambience that has brought us into being and that enables us to fulfill the purposes for which we were brought into being. The central reality that undergirds all of concrete experience and to which we continually seek to adapt is disposed toward us in ways that we can interpret as graciousness and beneficent support.* Nature conceived in these terms would qualify as friend to us.

This definition contains four assertions, each of which is essential for framing a concept of nature that can qualify as friend: (1) that we belong to nature, it is not an alien setting for us; (2) that nature has brought us into being; (3) that it constitutes an ambience in which we can live out and fulfill the purposes of our lives; and (4) that

whatever it is that undergirds our experience within the ambience of nature supports us at a fundamental level in ways that justify the term “gracious.” Both meanings of nature—source and cosmos—come into play in this understanding of nature as friend, although the former is more prominent. On the one hand, to speak of nature’s friendship is to make a statement about the actual workings of natural processes as they come to bear upon us. On the other hand, the workings of those processes, whether immediately beneficent or not, is secondary to whether we can speak of a fundamental intentionality of nature that is oriented toward our well-being.

#### A CONUNDRUM

It is my thesis that traditional Christian faith and theology do indeed want to affirm that nature is grounded in such a principle of love. However, when we probe Christian faith, in order to throw light on the traditions relevant to this thesis, we come upon a conundrum, the examination of which will take us part of the way toward understanding the assertion that nature is grounded in love. This conundrum stands squarely in the way of our attempts to grasp Christian resources for experiencing and interpreting nature. I understand the conundrum in the following manner: *For most of its history, Christian faith and theology articulated views of nature that were richer than the scientifically authorized concepts of its envioning cultures. The Christian views asserted a higher status for nature than the cultures allowed and they described a panoply of possibilities for nature that seemed absurd to the cultures in which Christianity had emerged and taken root. In the postmodern period of history, science has both authorized and demanded a startlingly more expansive concept of nature than in the classical and modern periods. Neither science nor Christian faith, however, has generally recognized that the new scientific views call for equally startling rearrangements in the ways science and Christian faith understand each other. Christian faith must recognize that it no longer faces a science that minimizes nature and its possibilities, whereas science must recognize that Christian polemic against scientifically grounded concepts of nature is anachronistic, appropriate for earlier scientific views, but not for the leading edge of scientific thinking about nature in our own times. This mutual recognition and rearrangement of attitudes holds great significance not only for science and Christian faith, but also for the cultures in which they play determinative roles.*

This conundrum, if I have posed it properly, is of general interest; it can stimulate explorations in several directions, with respect both to the history of the relations between Christianity and science and also to constructive philosophical and theological thinking concerning nature and its relation to God. There is a special relevance

to the themes of this article, however: The surplus of richness that I refer to in the Christian view of nature is precisely the richness that speaks of nature's grounding in love and its possibilities for functioning as our friend. The constraints and restricted expectations that have been necessitated by what Western culture's science would sanction have rendered it impossible for the Christian view of nature as operating under the principle of love to be properly communicated.

In propounding this argument, I at one and the same time subscribe to a common historical assumption and yet proceed in a somewhat unorthodox direction from that assumption. The assumption holds that what a culture's science presents as the authorized picture of nature conditions everything that can be thought within that culture (Collingwood 1945, 131f.). The science is, normally, physics, and its preeminent form is that which is presented early on to the young in their homes and schools. A great deal of scholarly work has established that Christians articulated their faith theologically for nearly two millennia of Western history in ways that bear the marks of the authorized concepts of nature that prevailed in the dominant cultures—first in the science of the Hellenistic world and then in the Renaissance and Enlightenment science that reached a kind of quintessential expression in the work of Sir Isaac Newton (Wildiers 1982, 5–11 *et passim*). We are indebted to this scholarly work for its illumination of the constraints, at times constituting a kind of servitude, imposed by the authorized scientific views of the past upon Christian theology. At times these constraints have been so effective that they are held as identical to the faith itself.

My intention here, however, is not to follow the scholarly route of exploring more deeply the bondage of Christian faith to the sciences of its ambient cultures, even though I accept that such bondage has been real, but rather to read the history of the West from a different perspective. I suggest that this history is also the story of cultures whose authorized concepts of nature made it impossible for them to receive the Hebrew-Jewish-Christian understanding of nature because it so far surpassed their expectations of what nature is and can become. Against this background, the significance of the scientific concepts of nature that have been propounded in the last century and a half and their import for Christian faith take on new proportions.

## THE FUNDAMENTAL CHRISTIAN VIEW OF NATURE

Despite much opinion to the contrary, it is difficult to imagine a more exalted and expansive view of nature (considered both as cosmos and as source) than that which is enshrined in the basic logic of Christian myth and theological doctrine. Furthermore, it is a view that does indeed consider nature to be a realm that is conceived and carried out in love, oriented toward being friend in the way that I described earlier. I will reflect upon the Christian view in terms of its origination, its present operation, and its future.

1. *Nature's Grounding.* This view holds that nature originates in the immediacy of God's creative work. There is no intermediary between God and the creative act of origination. Neither does nature undergo testing or struggle in its coming into being. For example, in contrast to some other worldviews, in the Hebrew-Christian view nature does not have to pass through an ordeal of chaos and ordering in order to come into being as creation. Nature is simply called into being by its creator. This is the logic of the two Genesis creation stories, as well as the traditions concerning creation that are embedded in the book of Job, the nature Psalms, and in the Gospels of the New Testament. This logic is articulated doctrinally in the creation out of nothing (*creatio ex nihilo*)—there is no other ground for nature's originating than God. The theological tradition holds, furthermore, that this origination takes place under the conditions of God's freedom and intentionality. These two factors are important, because they signify that nature has come into being as part of God's desire and will to create that which God truly wishes. The Christian concept of nature's origination in the immediacy of divine freedom and intentionality is filled out when we consider that the God who creates is marked by perfect goodness and love. Nature, therefore, is what the good and loving God brings forth in immediacy in utter freedom and intentionality. With this in mind, it is not surprising that the New Testament speaks so often of redemption and salvation as *new* creation. In the doctrine of continuing creation (*creatio continua*), it is asserted that all of the richness of the concept of originating creation also marks the ongoing relation of God and nature through nature's history. Bernhard Stoeckle has called attention to the primacy of the axiom *gratia praesupponit naturam, non destruit, sed conservat et perficit eam* in the Christian view of nature. This can be translated in at least two ways: "Grace *presupposes* nature; it does not destroy it, rather conserves and perfects it" or "Grace *undergirds* nature." Both senses have been fundamental in the Christian

tradition, and they carry three important implicates: that grace preserves nature, it does not destroy it, that grace is the foundation of nature, and that grace leads nature to its fulfillment (Stoeckle 1962, 18).

2. *Nature's Continuing Capability and Suitability to Be a Vessel of God's Presence and an Instrument of God's Work.* The mainstream of Christian myth and doctrine depicts nature, in its natural state, even after Adam and Eve were cast out of the garden, as a fit realm for divine presence and an instrument for God's action. The doctrine of the Incarnation of God in Jesus and the supporting dogma of the Two Natures of Christ support this capability of nature in *fortissimo*. The prime texts, dating from the mid-fifth century of the common era, are the Tome of Leo and the Formulation adopted at the Council of Chalcedon. What is noteworthy about these documents, for our theme, is their vigorous insistence, to quote Chalcedon, that in the man Jesus we meet the divine and the human "without confusion, without change, without division, without separation—the difference of the natures being by no means taken away because of the union, but rather the distinctive character of each nature being preserved, and each combining in one Person" to do God's work (Hardy 1954, 373). This is a remarkable statement, particularly, as we shall see, in the context of the normative science of its ambient culture. In Jesus, the human remains fully and naturally human, without change, while the divinity is likewise uncompromised. The theologians never explained satisfactorily how this could happen and how it could continue, but that they asserted it is incontrovertible, and their assertion reveals the quintessence of the Christian confidence in the status and possibilities of nature. The sacramental theology of the mainstream is of a piece with the doctrine of the Two Natures of Christ. Real bread, real water, when understood within the promises of Scripture can be vehicles for actualizing the grace they portray. The water of baptism depicts a cleansing that befits our fundamental nature as creatures from God, and the bread and wine of the Lord's Supper present a nourishment that brings health as those same God-intended creatures. Nature, in this view, can be considered a means of grace. What is required is a certain framework that includes both interpreting the natural phenomena in light of the graciousness of God and also what the Reformers called "use," which means that the sacramental natural object must be related to humans in their actual existential situation. Nature does not bear the gracious promise in the abstract, but only in the context of my understanding that I share in that nature and participate in it. The Reformation of the sixteenth

century did not maintain a consensus on these points, but Martin Luther insisted that the finite is capable of the infinite, and he considered all of the phenomena of nature to be “masks of God” (*larvae dei*). We remember that Luther would not have meant that God was to be found “behind” the natural things that hid God or stood between God and us. Rather, masks in classical drama *are* the figures they portray. If a boy wore the mask of a woman, he was a woman in the drama—not a boy wearing a mask, but a woman and representing her character in the drama. *Gratia praesupponit naturam*, indeed.

3. *Nature's Future.* The Christian tradition has not been so clear about nature's future in God. However, its myth has insisted that Jesus was resurrected *in body*, not just in spirit, and we are to share in this risen bodiliness. One prominent ancient tradition, that of Saint Irenaeus, speaks of the final condition as a recapitulation of all of creation. Scripture speaks of the transfiguration of nature in terms of what we know here on earth: the heavenly Jerusalem, the lion and lamb lying down together, the warring nations all coming together to eat at God's heavenly banquet in reconciliation.

My point is not that Christian faith and theology have always been perfectly clear concerning the exalted status of nature, nor that they have behaved in ways that accord with what I have described. Rather, I mean to call our attention to the fact that the coherence of the Christian picture of reality, its myth, and its fundamental doctrinal elaboration of that picture of reality contain within them an impressively strong affirmation of nature viewed in terms of its origination, its continuing life, and its possibilities—both as the cosmos of all created things and as the source of all created being. It is a view that understands nature to be grounded and sustained in the free intentionality of a good and loving God and also to be a fit vehicle for the expression of that loving God's will. It is, I suggest, an understanding of nature which sustains the notion that nature can truly be our friend, as I described the concept of friend at the outset. We may more often think of the Christian emphasis upon Adam and Eve eating the forbidden fruit, the Fall, and sin, together with Christ's rescuing redemption. That these emphases are present in the Christian tradition in full force and that they have been interpreted by Christians in ways that directly oppose my thesis, cannot be denied. The same Christians who hold these views of Fall and sin, however, also hold to the divinely willed origination of nature and its fitness for the Incarnation and the sacramental life.

THE RECEPTION OF THE CHRISTIAN VIEW OF NATURE IN  
CLASSICAL WESTERN CULTURE

I cannot provide a detailed history of concepts of nature that predominated in the course of Western history, but I will sketch what seem to me to be salient characteristics of that history and my conclusions will themselves constitute proposals for further exploration. When Christian faith extended itself into the Mediterranean world, it entered a milieu that generally considered the natural realm to be defective, despite its many excellences, beauties, and pleasures. At one end of the spectrum were the cults that practiced self-mutilating rituals that symbolized the need for humans to escape nature if they were to find salvation. We would probably prefer to consider the mainstream of Hellenistic natural philosophy, including Plato, Aristotle, and their successors. Certainly, Plato's *Timaeus* was the central text in these matters for the majority of the intellectual class in the Hellenistic world (Wilken 1984, 85). Structured on the categories of being and becoming, the natural world exists in the realm of becoming and, so is always assigned a secondary and inferior position. Even though Plato's Demiurge God puts together the best world possible out of the preexisting disordered matter (*Timaeus*, in Jowett [1892] 1937, 14ff.), and considers it to be "good," that goodness is defined as the best that is possible under less than the best conditions, namely, those of becoming. It is a copy of the ideal, but not identical.

What we have here is a very significantly mediated relationship between God and the world of nature. Between God's freedom and intentionality there stands the primordial disordered matter which is given to God, upon which creation is exercised, and which substantially conditions what that creation can accomplish. Both God's freedom and intentionality are limited by preexisting matter. Aristotle spoke in terms of an even more tenuous relationship of God and world.

Robert Wilken has described the criticism that Christian faith received from Hellenistic intellectuals, from the second century of the common era onwards, on this matter of the relationship of God and the world, and its consequences for understanding nature. Galen, the mid-second-century philosopher who also devoted himself to the study of anatomy and medicine, criticized Christian belief on precisely these points. He rejected the notion that God brought things into being solely by an act of divine will, insisting rather that things cannot be brought into existence out of nothing and that to exempt God from adherence to prior laws of nature introduces an



unacceptable arbitrariness into the concepts both of God and of nature. Galen reinforces the *Timaeus* in its adherence to the being/becoming dichotomy and in its picture of God the Creator as a potter working upon preexistent matter (Wilken 1984, 81–93).

In Galen's response to Christian belief, then, as in subsequent criticism by Celsus (late second century) and Julian the Apostate (fourth century), all three of the basic Christian emphases with respect to nature and its origination are challenged: the immediacy of origination from God (creation out of nothing), ongoing sustenance (continuing creation), and the grounding of nature in God's freedom and intentionality. Wilken points out that the creation out of nothing, although suggested by the primal biblical myths, was not argued by the theologians of the first century. It was rather as they began to reflect upon the relevant ideas that were current in their culture and compare them with their biblical faith that beginning in the late second century they insisted upon the "out of nothing" as the most adequate conceptual elaboration of their faith (Wilken 1984, 90–92).

Wilken summarizes this matter thus:

When Christianity did begin to appear in the cities of the Roman Empire and came to the attention of Greek and Roman intellectuals, the Christian view of God's will in creation offended Roman and Greek sensibilities. God, in the Greek view, dwelt in a realm above the earth, but he did not stand outside of the world, the *kosmos*. Earth and heaven are part of the same cosmos, which has existed eternally. The world is not the creation of a transcendent God. The cosmos has its own laws, and all that exists—the physical world, animals, man, and the gods—are subject to nature's laws. "Certain things are impossible to nature," said Galen, and "God does not even attempt such things at all." Rather, "he chooses the best out of the possibilities of becoming." (Wilken 1984, 91)

Here the difference between the Christian understanding of nature and that of the Greek culture is clearest: Whereas Galen, like Plato, sees God bound by the iron laws of nature's necessity, the Hebrew and Christian view holds that the good and free God is the ground and source of nature and its laws. To the Hellenistic thinkers, the Christian view seems to be arbitrary and irrational. To the Christians, the Hellenistic view is reductionist, an inadequate vehicle to express the possibilities that they see in nature with respect to its origins and also to its present and its future.

What we often call the "Hellenization of Christian theology" is the extensive use by theologians of the categories that flow from the elaboration of the metaphysics of the being/becoming distinction. These categories thoroughly condition the theological articulations of

Christian faith. Nowhere is this conditioning more clear than in the Tome of Leo, in the Chalcedonian Formulation referred to above, along with other attempts to clarify the relation of God and nature in terms of the Two Natures dogma. The Two Natures correspond to being and becoming. The character of these attempts must be clearly comprehended, however: In every instance, although the theology fails to give a convincing account of how being or God can be present under the forms of nature, in every instance the theology insists that this presence can happen and has happened. In other words, theology is asserting flatly that the Christian perspective not only opens up the possibilities that the Hellenistic views consider impossible, but it also insists that these possibilities are already efficacious. It is truly significant that theology was thus conditioned by its culture, but it is even more interesting to recognize how it surpassed that conditioning, even though it was without the conceptual means to articulate its surpassing vision.

The Middle Ages saw the continuation of these issues, given the modulations that are due to the decline of Plato's influence and the rise of Aristotle's. Even though the Western European universities required the study of Aristotle for all who received the master of arts degree, during the 450 years from 1200 to 1650, and despite the great synthesizing work of Thomas Aquinas (1225-74), which brought Aristotle's thought into intimate conversation with Christian faith, the tension between Aristotle and Christian theology was significant (Grant 1986, 49-75).

Since, however, the medieval theologians were thoroughly versed in Aristotle's thought, and also committed to interrelating their studies in theology and natural philosophy, they worked out *modi operandi* that lasted for several centuries. Here, as in the encounter with Plato, they found that the Aristotelian framework did not permit them to articulate the fullness of the Christian view of nature, because it would not allow the immediacy of nature's origination and continuation in the activity of God. Consequently, they fashioned means for acknowledging Aristotle on most matters of concrete fact, while at the same time allowing their understanding of nature to overflow Aristotle's mold. In Scriptural exegesis, they adopted the principle that when a passage violated the Aristotelian principles, it must be interpreted allegorically. The "arts masters were free to uphold almost all of Aristotle's scientific conclusions and principles, provided that they conceded to God the power to create events and phenomena that were contrary to those conclusions and principles and which were therefore naturally impossible in the Aristotelian system" (Grant 1986, 68). These moves do not seem adequate to us

today, but they make sense when viewed from the perspective I am proposing—attempts to maintain an understanding of nature that surpassed the lineaments of the culturally sanctioned concepts that were available to them. Similarly, the moves to contravene Aristotle were prompted, not by ignorance or sheer dogmatism, but rather by a view of nature of which Aristotle could not take the measure.

#### THE RECEPTION OF THE CHRISTIAN VIEW OF NATURE IN MODERN WESTERN CULTURE

It is common to suggest, as Collingwood does, that in the late fifteenth century, perhaps with Copernicus (1473–1543), but I would also mention Leonardo da Vinci (1452–1519), there appear the beginnings of the Renaissance and modern views of nature, which supplant the Greek view (Collingwood 1945, 4–9; Deason 1986, 168). The latter understood nature in analogy to a living organism, whereas the new view grows out of the experience of humans with machines. Anyone who has studied Leonardo's notebooks and sketches knows how he worked with spaces, landscapes, and bodies on graph paper. Here we see the technologized, machine view of nature and get a glimpse of how it employs mathematics to subdue nature as if it were truly a lifeless realm. Interestingly, Martin Luther and John Calvin fit into this trend of thought through their insistence on passive justification, that is the total dependence of all things, including human righteousness, upon God's sovereign will and action. (We also recognize that Calvin was much less convinced that "the finite is capable of the infinite" than Luther was.) Gary Deason summarizes their views and its significance for our discussion: "As a result of their belief in the radical sovereignty of God, the Reformers rejected Aristotle's view of nature as having intrinsic powers. In place of the Aristotelian definition of nature as 'the principle of motion and change,' the Reformers conceived of nature as entirely passive" (Deason 1986, 177). Finally, this view of nature would contradict what the reformers wanted to say, most specifically their conviction that natural objects in the sacraments served as *means* of grace, even though it offered momentary support to their critique of a view of divine grace that gave too much place to human effort.

In the hands of Sir Isaac Newton and the mechanist natural philosophers of the seventeenth, eighteenth, and nineteenth centuries, the view of nature as passive and inert remained, but God became the sovereign ruler of the world machine (Deason 1986, 182), and therefore the final instance of scientific explanation in the face

of the increasing mathematization of nature. What we know as Deism is but one extreme development from this picture. The other may be Newton's own belief that all activity in nature is a manifestation of God's power—including such active forces as gravity, fermentation, and cohesion (Deason 1986, 184). In his General Scholium, Newton wrote that because of God's omnipresence, God is able to act in every part of the world without exception: "God is omnipresent not *virtually* only, but *substantially*. . . . In him are all things contained and moved" (Newton [1705] 1934, 545).

These views were in accord with the Christian insistence upon the immediacy of nature's relation to God but evacuated nature as a realm in which God could be present in any significant way except as an explanation of natural causality. It also cut the concepts of the immediacy of the origination and the sustaining of nature, its rootedness in God's freedom and intentionality, to the cloth of the world machine and its causality. The concepts of grace presupposing and undergirding nature, of the finite as capable of the infinite, of nature as the mask of God, and of the future fulfillment of nature, as well as the sacramental understanding of nature—all of these are damped down by the machine model of nature. Although these terms can still be used, they carry very little of the richness of the primordial Christian myth and its doctrinal elaborations. The Chalcedonian concern, for example, that in Jesus Christ, the distinctive characters of the divine and human be preserved, while affirming their unity for the sake of fulfilling God's will, is rendered almost pathetic by transposing it into a concept of nature as inert machine.

Newton's understanding of God's causality was in part dictated by his inability to find better explanations of natural forces. This may be a reason why he himself did not promulgate his views on God very widely. As scientific explanation progressed in scope and persuasiveness, his view took on the appearance of a "god of the gaps" position.

Against this background, we are in a position to understand the brilliance and the significance of the single most important philosophical and theological effort to come to terms with the Newtonian, that is, the Renaissance-Modern, system. I am referring, of course, to the work of the Prussian Lutheran pietist philosopher Immanuel Kant (1724–1804). Kant understood, whether explicitly or intuitively, that the Christian perception of nature could not be elaborated adequately on the loom presented by the scientifically authorized concepts of his era. Therefore, he made a move so brilliant and incisive that it has conditioned, for better or for worse, virtually all of Protestant theology since and a great deal of Catholic theology. Beyond that, it has assumed the status of received tradition for much

of philosophy, not only in those schools of thought that explicitly pay allegiance to Kant, but also in those that have translated Kant's move into other categorial systems and rhetorics, such as the Existentialists and the Wittgensteinians, as well as their descendants among the so-called postmoderns. Finally, and perhaps most telling, the Kantian option still has a large following among practicing scientists who reflect upon the interactions of science and religion.

What Kant accomplished was to establish a storm-free area in which Christianity could propound its view of the world, in principle untouched by the critique of Newtonian science and its philosophical elaborations. Although there is no single correct interpretation of the Kantian corpus, the move I speak of can be characterized in terms of the argument of the first critique, that of pure theoretical reason, contrasted with the second (the critique of pure practical reason) and the third (the critique of judgment). The first critique, it is said, demonstrates that scientific reasoning is inherently incapable of dealing with the concerns of religion, morality, and aesthetics, while the second and third demonstrate how practical reason, aesthetics, and judgment inhabit the realms in which religion can be articulated and actualized.

In somewhat different terms, but based on the same texts, one can describe Kant's achievement as the demonstration that there are two realms, the phenomenal and the noumenal, and that science inhabits the former, religion and morality, the latter. Setting aside for the moment the ambiguity whether these realms pertain only to the order of knowing or also to the order of being, this distinction of phenomenal and noumenal has become a permanent fixture of Western thinking, even for those who reject it. The phenomenal realm refers to things in their temporal and spatial relations, while the noumenal refers to things as they are in themselves. Scientific reason is at home in the phenomenal world, religion and morality in the noumenal. The notions of time, space, causality, and the like are at home in the phenomenal realm; God, freedom, and immortality, in the noumenal. Reasoning cannot penetrate the noumenon, but moral action, faith, and aesthetic judgment can. With these terms, Kant provided the most significant basis for the so-called "two worlds" or "two cultures" distinction between science and religion. Further, by establishing in a normative fashion that the human mind mediates our encounter with the reality outside of us and that the concepts upon which science is dependent are inherent in the mind, rather than in that outside reality, he reinforced in an influential manner the idea that science rests finally upon human ways of thinking as much as it does upon the way reality is external to our minds.

When we interpret Kant's epoch-making strategy against the background of the argument I am proposing, we recognize it as a strategy for creating breathing space, *Lebensraum*, for the Christian understanding of the world that the scientifically sanctioned concepts of the culture could neither comprehend nor tolerate. If Kant's move is correctly termed "the turn inward" (which can be disputed), at least it is clear what necessitated the turn. To us, his turn seems unsatisfying, but we can appreciate what prompted it and what it accomplished. Two of the greatest successors to Kant, the Lutheran G. F. W. Hegel and the Anglican Alfred North Whitehead, challenged the entire Kantian way of putting the questions. They are most adequately interpreted as thinkers who called into question the way he looked at the world. Hegel (1770–1831) lived in the generation when a new understanding of nature seemed to be emerging, about which science was not yet clear, and for which adequate concepts and terms had not yet been fashioned. By Whitehead's time (1861–1947), a new scientific perspective had already appeared, so that he was able to see more clearly what Hegel had been able only to anticipate in his philosophical construction (Collingwood 1945, 132).

#### A NOTE ON NATURE AS FRIEND

I suggested at the outset that it would be impossible to construe nature as friend, in the way that I have defined "friend," under the culturally authorized views of nature in the classical and Renaissance-Enlightenment eras. I hope that the intervening analysis has made it clear why this is the case. The grounding of nature in love, which is the presupposition for its being friend, requires precisely those concepts that Western culture has not authorized—the immediacy of nature's relation to God as its sole source and the fitness of nature to be a vehicle of the free intentionality of the good and loving God who is its source. The dissonance between what culture would allow and the primordial mythic vision of the Christian faith (which it has sought to elaborate doctrinally) touches not only upon issues of methodology and the formal relationship between religion and science but also upon matters of content. Nowhere is this clearer than in the Chalcedonian documents, where the effort is to break open the Hellenistic categories that will not allow the grace of incarnation and redemption to happen. In the experience of the Christians, this grace had become real, despite the conceptual denials by the culture, but the content of that experience of grace could not be communicated in the terms that science and philosophy made available.

THE NEW ERA IN SCIENCE: DARWIN, THE NEW PHYSICS,  
AND MORE

The line of thinking that I am proposing understands that since Charles Darwin's work, about one hundred fifty years ago, the scientifically authorized concepts of nature have taken a dramatic turn that in effect radically rearranges our mental furniture. When I speak of a new era in science, I have in mind these major areas of scientific exploration and thought: Darwin's theory of evolution, marked by adaptation and natural selection and the developments that go under the term the "modern synthesis" that relate Darwin to Mendel, and evolution to genetics and molecular science; the developments in physics that accelerated toward the end of the nineteenth century, including relativity theory, quantum mechanics, the thermodynamics of nonequilibrium systems, chaos, and complexity; cosmology, including theories of the so-called Big Bang and responses to it; the discovery of the DNA molecule, developments in genetics, including behavioral genetics, and so-called sociobiology; paleontology, primate research; the neurosciences; theories of biocultural evolution; and the sciences concerned with information and computers.

What is clear about the new views of nature opened up by these and other sciences in the last century and a half is that there has been an incredible deepening and expanding of our views of what nature is and what its possibilities are. I am not competent to discuss this deepening and expanding except in the terms of a layperson. In these terms, four factors seem to me to constitute what I call a radical turn in concepts of nature that are sanctioned in our scientifically informed culture today.

First, consider the nearly incomprehensible size of nature in time and space. Nature as *cosmos* is at least 15 billion years old and stretches over a universe so large that communication across it is impossible—made up of more than a billion billion stars. The sheer quantity is not to be minimized as a mind-expanding dimension of our concept of nature.

Second, there is an equally startling dimension of smallness to nature. The microscopic, the molecular, the subatomic, the quantum levels of nature also make a forceful impact upon the mind's view of nature. The infinitely large and the infinitely small taken together remind us that commonsense experience is not a reliable source for perceiving and understanding nature in its fullness. Some of the most important things we know about nature defy commonsense experience—that matter is mostly empty space, that matter is made

up of particles, that we share so much of our DNA in common with other species of animals.

Third, all of nature can be interpreted within a concept of evolution: cosmic evolution, terrestrial evolution, the evolution of the organism, and the evolution of culture. Further, it is increasingly possible to conceptualize the entire history of nature, from Big Bang to us and beyond, as belonging to a single process of evolution, as thermodynamic theory, for example, suggests. This process of evolution accounts for the interrelatedness of all things. Humans are part of this interrelated nexus—we are thoroughly creatures of nature.

Fourth, nature is capable of surprising and unpredictable novelty, full of possibilities that beggar the imagination. The possibilities of the singularity in which the universe was born—the Big Bang—include galaxies, stars, and us. That inorganic stuff can be the matrix in which life emerges. DNA and our genetic material can convey the information that makes it possible for complex organisms like ourselves to emerge. The possibilities that have already been actualized in the huge continuum of cosmic and terrestrial evolution make older ideas of transcendence pale in comparison. Sheer matter, the material world, has been the arena within which novelty is exhibited in such vigor and breadth that our concepts and language cannot comprehend it or articulate it adequately.

Quantity, the inadequacy of commonsense experience, the interrelatedness of all nature in a process of evolution, and the unimaginable richness of nature's possibilities—these may appear to the scientist to be crude terms, but they do begin to convey that our science is depicting nature for us in terms that were unimaginable in comparison with previous epochs of Western history. I am sure that scientists may say that I have been far too prosaic really to convey the mysterious and spectacular qualities of nature that they deal with regularly in their work.

#### THE LIBERATING POSSIBILITIES OF NEW CONCEPTS OF NATURE

Thirty years ago, theologian Bernard Eugene Meland spoke about some of the same matters that I have mentioned. He welcomed them as “the opportunity that has been offered to us out of the accidents of history and the creative developments within the sciences to convey a fuller witness of faith than the discourse of culture customarily affords, certainly than the discourse of Western culture during the past three hundred years of our history has been able to make possible” (Meland 1962, 106).



Meland did not mean that the new concepts of nature opened up by the sciences in our time will lead directly to proofs for the existence of God, nor did he imply that the new concepts will attract converts to the faith in large numbers. What he meant was that Christian faith constitutes one of the elements in our culture that is committed to what John Polkinghorne calls "the deepest possible understanding" of reality (1988, 97). This commitment grows out of a conviction, first of all, that reality itself invites us to the deepest possible understanding, and that, second, such an understanding is the grounding for more wholesome living. Western culture's authorized concepts of nature have been a barrier to that deepest possible understanding, and this fact has been manifest in the science of the West. All persons who have been devoted to the deepest possible understanding have sensed this defect—not just Christian theologians, but all profound persons, including many scientists themselves. What gives hope to theologians in particular about the new era in scientific understanding of nature is the possibility that this barrier to the deepest possible understanding of reality may at last have been lifted for us in the West.

Earlier, I summarized the Christian view of nature as including these elements: (1) as to origination, nature is grounded in the immediacy of the free intentionality of a good and loving God; (2) in its ongoing functioning, it is a fit vehicle for this divine intentionality; it can be an instrument of God's presence and action without detracting from or adding to its integrity as nature; (3) as a dynamic, perpetually unfinished process, nature is on a trajectory of future fulfillment. Scientific concepts of nature will not serve to substantiate the reality of God, nor the kind of metaphysical grounding of nature that the Christian affirmations require. Let us be clear about this; when I say that new scientific understandings of nature may be liberating for Christian articulation of its faith about nature, I make no claim for science as a substantiation of Christian claims.

Wherein, then, do the liberating effects of new scientific concepts appear? This must be stated as carefully as possible, because it will prove to be the statement of agenda for attempts to fashion an adequate Christian theology of nature. *The new concepts of nature are liberating for Christian faith, because they offer possibilities for understanding and describing the qualities and functions of nature in ways that are more adequate to Christian understandings and also scientifically credible.* For example, no scientific theory can render a judgment on a particular natural phenomenon or process as a bearer of grace or as a candidate for interpretation in sacramental perspectives. When, however,

Christians speak about the nature that they perceive as a vehicle of God's gracious action or sacramental presence, they should now receive new insights into that action and presence, be more able to describe that nature in terms that are commensurate with scientific understandings. David Oxtoby's way of handling phase transitions, metastable states, and nucleation processes offers us a hint, for example, of how he believes current scientific concepts may be commensurate with ideas of miracle. Note that I use the term "commensurate"; there is no claim that the chemistry of his article substantiates or proves a concept of miracle (Oxtoby 1994, 547-55). He may be right, however, in his suggestion that the chemistry may give us insights into what it means to talk about a miracle. Lindon Eaves has provided another example, in the way he has related the concept of the "Unfinished 'I'" to his scientific experience as a geneticist (Eaves 1993). William Klink draws comparable insights concerning the unfinished character of natural reality from his reflections on the sciences of ecology (Klink 1994, 529-45).

This question of how religious affirmations and theological formulations relate to scientific statements and theories is, as we know, a controversial one. Perhaps I am suggesting a version of what has been called "consonance" between theology and science, as propounded by Ian Barbour, Ernan McMullin, and Ted Peters. Barbour and Peters seem to speak of "correspondence"—that is, "correspondence between what can be said scientifically about the cosmos and what the theologian understands to be God's creation" (Peters 1989, 13). Barbour finds such correspondence, for example, between the contingency of existence and of boundary conditions as contemporary physics speaks of them, on the one hand, and the theologian's concept of creation out of nothing, on the other (Barbour 1989, 141-44). Both of them cite Ernan McMullin, who speaks of the Christian intention to "aim at some sort of coherence of world-view, a coherence to which science and theology, and indeed many other sorts of human construction like history, politics, and literature, must contribute" (McMullin 1981, 52). He goes on to say that theology and science are thus consonant in the contributions they make to this worldview.

If we accept McMullin's description, then my train of thinking might be that the scientifically authorized concepts of nature in the first eighteen centuries of Western history after the emergence of Christianity made a coherent worldview extraordinarily difficult. The Chalcedonian texts to which I have referred several times may be read as very intense efforts to establish a coherence; but they failed, because Hellenistic concepts of nature, deriving from the

*Timaeus*, simply would not allow the presence of ultimacy or divinity under the forms of nature in the manner in which the dogma of the Two Natures of Christ asserted. Today, scientific understandings of nature do not affirm the incarnation, any more than they did in the fifth century of our common era. I would suggest, however, that a nature that can include the occurrence of a cosmological singularity like the Big Bang, from which radiation gave rise to particles, atoms, molecules, galaxies, and planets; a nature that can constitute itself in the sort of phase transitions that David Oxtoby speaks of (Oxtoby 1994); and a nature that can embrace the notion that inorganic chemicals formed the matrix in which life emerged, and in which the DNA molecule finally shows itself to be so powerful and productive as to instruct the formation of the human species—these concepts of nature will not be a barrier to the religious affirmation that nature can be a bearer of transcendence, that nature can contain the possibility of grace.

#### THE AGENDA FOR A THEOLOGY OF NATURE

I have suggested that our interpretation of the liberating effects of new scientific concepts of nature would form the agenda for a Christian theology of nature. Here I amplify notions of consonance and coherence between theology and science to include constructive integration of science and theology and the reformation of theology. The challenge that faces a theology of nature is first of all to allow scientific understandings of nature to throw light on how best to understand the fundamental mythic and doctrinal affirmations concerning nature that are indigenous to Christian faith. Second, the task is to articulate those affirmations in ways that are as faithful as possible to the Christian vision and also as credible as possible in terms of our scientific understandings. The bottom line for the theologian will be to articulate those affirmations so as to do justice to the Christian view of the immediacy of nature's relation to God, both as to its origin and its ongoing functioning, as well as the view of nature as a fit vehicle for the free intentionality of a good and loving God. In shorthand, *the theologian's task is to articulate, within the framework that our culture's concepts of nature provide, as vigorously as possible, the understanding that nature is rooted in love and therefore truly is our friend.* This challenge is critical, not just for Christian faith, but for our culture. Its health is substantially dependent upon its understanding in what ways nature can be experienced and interpreted as a realm of love.

## POSTSCRIPT: THREE CRITICAL DIFFICULTIES

The agenda that I have posed is not an easy one. Even though it is not possible to explore them here, I will describe three of the major difficult issues that confront this agenda, as a way of drawing the curtain on what I have to say about nature and the love of God.

The first two issues have to do with the mutual relationships between religion and science, as they are affected by the historical trajectories that I have placed at the center of this discussion. It is critical that both Christian faith and the sciences take account of the new situation that I have depicted and permit it to rearrange their attitudes toward one another. Christians may well regard science according to the stereotypes that emerged in earlier engagements during the ancient and Enlightenment periods. After all, as Max Wildiers has described so well, theology bears within its soul the marks of the distortions that were inherent in the cultural forms by which the Christian faith was molded in its first eighteen centuries. The conditioning by inadequate Hellenistic categories and the Kantian escape strategy feel so natural to the traditions of Christian faith that it is no surprise that so many Christians equate scientific understandings with the painful experience that they had prior to our present era. Understandable as this may be, to ignore the changed concepts of nature brought about by nineteenth- and twentieth-century science is to court disaster. To miss the newness that history and science have opened up for us is to be deaf and blind to the opportunities that are now available to us for understanding nature and articulating the sense of possibility that Christians know as grace.

Contrariwise, scientists may well regard Christian faith according to the articulations and polemics of previous eras, and consequently they will be deaf and blind to the substance of hope that Christian faith brings to its understanding of nature. It is true that Christian thinking may be placed in peril by its failure to see that the science and the concepts of nature of older eras no longer exist. But scientific thinking will also suffer distortion if it does not recognize that the criticism that Christian faith aimed at science and its views of nature in the past is now anachronistic and unproductive. This may account for the fact that so many scientists who are receptive to the deepest possible understanding of reality have either given up on religious faith's ability to contribute to that understanding or look to New Age trends to fill the space that traditional religion has filled. Similarly, the failure to sense the new situation may also explain why so much of mainstream theology pursues revised and updated versions of the

Kantian strategy of disengagement and escape rather than entering into full involvement with the worldviews of contemporary science. Not only do science and religion suffer under the distortions of such misunderstandings, the entire culture of the West is crippled by its inability to explore the religious and metaphysical depths that are inherent in the scientific understandings of nature.

The third difficulty is an even more profound one. Langdon Gilkey has dealt with it at some length: the presence of pain, loss, and death within the processes of nature (Gilkey 1994). How can nature be conceived of within the divine life, as a medium of love, as friend, when it finally destroys life, often with the infliction of great pain? On the one hand, as natural creatures, we are vulnerable, inadequate, even when we are at our best, and we suffer loss, pain, and death. On the other hand, we recognize that nature's evolution proceeds by way of selection, and selection means that individuals and groups die—plain and simple death. This is intrinsic to our experience of nature. Any theological interpretation of nature that hopes to speak to our times must take the measure of vulnerability and selection unto death.

Such theological interpretation must face head-on the excruciatingly difficult task of explaining how vulnerability and selection are to be brought *within* our understanding of nature's love and friendship rather than leaving them as external to theological understandings. Is vulnerability a fundamental design constraint, necessary for a system that begins as matter and at the same time is capable of becoming free? Does selection describe the conditions in which humans beings, under the rubric of freedom, determine to act upon their faith, submit to selection with self-awareness and decisiveness, as active agents, not as passive creatures? What do love and friendship, as realistic qualities of nature, mean in such a situation?

The traditional theological concerns for sin and fallenness would arise in this context. On the one hand, they present difficult challenges to the understanding of nature as a realm of love. On the other hand, Christian theology has not interpreted sin and fallenness as falsifiers of the premise that God made the creation good, nor of the conviction that love should govern human life. Consequently, it is not in principle decreed that sin and fallenness would render love impossible for nature.

Applying the terms *love* and *friend* to nature may seem on the one hand to be impossible, and on the other, sheer sentimentality. I believe, on the contrary, that the task of seeing nature as friend and loving process is one of the great challenges of our time—to the religious community and to the culture as a whole. Consequently, I

urge the agenda for a revised theology of nature. It is of the highest import for science and religion, to be sure, but in larger terms it is also essential for the well-being of our culture and the men, women, and children who must work out the significance of their lives within it.

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