

Holmes Rolston, III, *Science and Religion: A Critical Survey*
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Chapter 7



Nature, History, and God

Both *Nature* and *God* take plurals poorly, only provisionally or penultimately, with a certain logical and experiential drive toward the singular. In earlier times, persons have often believed in multiple *gods*, of course; but "gods" shifts to the lower case and changes its meaning. Further, such beliefs have tended to be replaced by monist or monotheistic creeds. The spirits are but fractured omnipresence. There can be but one God, at most. Likewise, there are *natures* in local things—the weasel has one nature, the oak another. Granite is hard, while water flows. By this we refer to the distinguishing characteristics of phenomenal entities. But we can recognize and enjoy these natures and still find, as science does, that lawlike operations govern the whole. There are fundamental constituents, origins, kinships, patterns, connected levels. Then we come to think more comprehensively of systemic *Nature*, which is expressed in the diverse natures of particular things.

Just as polytheism in religion gives way to monotheism, so science makes connections, more and more, and pluralism shifts toward more unified theories of nature, a universal nature omnipresent but delimited in particular things. Both science and religion are driven toward collective terms. The many are referred to the one.

We do not check these impulses by admitting that we are assigning to both fields more than they have yet delivered—an integrated model of nature and history, or one of God as the warrant for nature and history. The sciences are plural, with their multiple paradigms. The differing models of persons and societies in the human sciences mesh poorly with one another, and these in turn have not yet been fully correlated with models used to describe biological or physicochemical nature. The religions are many, with their multiple creeds, and even within theism there are several leading denominations. Believers and scientists both live with a certain hope that we can gradually envision the unity of things more clearly, but both know that we travel hopefully and slowly arrive.

We are always on a frontier where what is known mingles with what is believed and hoped about things incompletely known, wrongly known, and unknown. This drives the ongoing quest. We should hardly have predicted that our intellects would know nature as well as they already do, but, given where we now stand, we may believe that we will know nature yet better still. But to hold that nature is corporately singular, a Universe, or that there is one God grounding this systemic unity, claims

that are believed amidst the diverse phenomena and the competing, only partially convergent theories and creeds, will at present and in the foreseeable future require acts of faith.

1. NATURE AND SUPERNATURE

How far does the one term, "Nature" (with its history), compete with the other, "God"? Does the latter notion, *God*, complement what we believe, or know, or fail to know about the former concept, *Nature*? Our answer will involve, in this section, approaching the concept of the supernatural by an ever more comprehensive look at the natural. In three sections to follow, we will look at leading options within theism, examining each for its relative capacity to overarch or accommodate the place of the natural. These positions we call scientific-existentialist theism, process theism, and transscientific theism. Afterward, we close with what is more a commencement than a conclusion, an invitation to continue religious inquiry, past scientific inquiry, by doing the truth.

Emergence, the Natural, and the Supernatural

To believe in God is (by most accounts) to posit the *supernatural* beyond the natural.¹ But no theory can move toward a complementary union of God and nature so long as there is an unresolved dualism between the natural and the supernatural. Further, no contemporary creed can convincingly claim belief in God unless it first passes through, rather than merely bypasses, what we now know about the natural. This need not mean that the categories of science are error-free or complete, much less absolute or canonical, for these categories have no more claim to infallible finality than do the claims of religion. Nor are they less theory-laden. But we must nevertheless reckon with them.

It is often thought that scientific conceptions of the natural make belief in the supernatural impossible, superfluous, or superstitious. Some secular equivalents of religion may be viable in the future, possibly some naturalistic or socialistic faiths, but supernaturalism will disappear. "Belief in supernatural powers is doomed to die out, all over the world, as a result of the increasing adequacy and diffusion of scientific knowledge. . . . The question of whether such a denouement will be good or bad for humanity is irrelevant to the prediction; the process is inevitable. . . . Put in this way, the evolutionary future of religion is extinction."² So we meet again, this time from an anthropologist, Anthony F. C. Wallace, the now-familiar prediction that theism will vanish.

But perhaps the matter is not so simple. While scientific and supernaturalistic explanations are sometimes rivals, as we have seen, must they be so inevitably? To reach an answer we will enrich the category of the natural and try to leave it open-ended enough to permit its own transcending. We need to soften the rigid, mutual exclusiveness of the categories of the natural and the supernatural.

Once there was no consciousness, no learning, no life, no Earth, no solar system, neither compounds nor elements, but only the simplicity of primordial energy-

particles. If we let our thoughts run backward in time and run downward over ontological structures-processes (reversing the ladder of Figure 6.1) to imagine *nature* as it primevally was, any account we could then give would need to be stripped of all subsequent emergents. But such an account, though seemingly accurate for that period in time and level of development, would, as we now know, be manifestly incomplete. With the evolution of each later stage in the world story, the tectonic potential of nature actualizes into something *higher*—into stars and their elements, into planets and their compounds, and, on this planet, into life, mind, society, world history. That notion of "higher" is the critical dimension in the "super" of *supernatural*.

Each of the emergent steps is "super" to the precedents, that is, supervenes on and surpasses the principles and processes earlier evident.³ When life appears, the organic *transforms* the inorganic. Properties are superimposed on materials that before bore no such qualities. Needs appear, as do hunger, struggle, and disease. There arises the cybernetic steering by a life core, keyed in DNA. From the point of view of the categories of physics and chemistry, these phenomena are *supernatural*, that is, *superphysical*. They transcend previous ontological levels. This is not to deny biochemistry, only to insist on irreducibility. The phenomenon of information transfer through time by its instantiation over successive material sets, essential to life, is absent from the causal sequences of astronomy and nuclear physics.

The conscious search for meanings, central to personality, is absent from plant life. At changes of state, we may find blurred quantitative-qualitative transitions; there are twilight zones. But there are also genuine passages into novel phenomena. *In that sense, we do not say that naturally inexplicable things never occur; they occur in every emergent increment that breaks previous records of attainment and power.* They would come as a surprise to any science based on previously known nature. When they come, it may be possible partially to develop a science of the new phenomena; but they also come, above all, as developments in a story with increasingly rich historical dimensions.

When subjective inwardness appears, based on neural structures, it too is *supernatural* to its precedents in objective life, for all earlier somatic life was devoid of any centers of experience. With the coming of mind and culture, there is again a dramatic shift that is *supernatural*, that is, *superbiological*. The human capacities for language, for abstract symbol manipulation, for toolmaking, for cultural transmission, for doing science and religion, for historical self-awareness would, if viewed by monkeys, *per impossible*, be considered as supernatural to any orders of nature evidenced within themselves, despite the anatomical likenesses of their hands and brains with ours. Culture and the literate mind are *supernatural* to spontaneous organic nature. Employing the richest categories of biological science, we can only stammer before the phenomena with which sociology and anthropology have to deal. A sacred scripture, such as the Bible, or a scientific instrument, such as a spectroscope, is nonsense to chimpanzees, because these entirely transcend their capacities. They are nonsense even to biologists who are restricted to using only biological categories.

From the viewpoint of those placed at any particular stage, or forced to operate with the categories of nature available there, the higher steps will be supernatural,

that is, transcending and irreducible to existing manifestations of the natural. All the lower steps, however, will with rather more plausibility be regarded as natural, having progressively come to seem merely natural with their introduction across the stages of natural history (Figure 7.1). These phenomena are able to be understood (at least partially) by the probing mind. But we may also be forgetting when we term what lies behind "merely natural" how amazing is what has already managed to happen, and how incompletely our natural science categories explain the subsequently emerging developments in the story thus far.

Further, events have to be understood not just in their particular, plural natures, not in their classes, nor even in their causal connectedness or their lawlike operations, but in the parts they play in a drama. Sometimes a thing needs to be understood not merely immanently, in terms of what it now is in its own-being, but in terms of what it is becoming, as a link in a story. But the higher principles that it foretells on the story line are not yet evident, and are indeed, in our sense, supernatural, not immanent in that thing nor anywhere yet evident in the natural system, but ulterior in as-yet-uncreated, never-yet-natural states. In that sense, every emergence presents a kind of emergency in its challenging of theories and laws competent for the previous levels. Every lower science proves a limited case within some higher theory, and for adequate explanation we increasingly must pass through science into history.

Supernature and Supercharged Nature

There is a mixture here of epistemic advance with ontological advance. Some may object that events all along have been purely and simply natural, but when humans in their earlier ignorance first studied them, they mistakenly regarded as supernatural those events that we now know to have been natural (lightning, birth, the creation of life, mind). With epistemic advances, the enlarging category of the natural will eat up the category of the supernatural. But more is involved. The category of the natural is elevated as it enlarges, so that the seeming victory is Pyrrhic; the "super" reappears, even though digested, in a now-spiritualized "Nature." Nature proves richer, more fertile, brooding, mysterious, sacred than was recognized before. "Nature" conquers by rising to just those levels that were before defended by the term "supernatural," and none of the high ground is lost. A spirited history, a history of spirit, supervenes on matter-energy. The generative power is, after all, the lure of Spirit, and whether we call this *Supernature* or *Supercharged Nature* is little more than a semantic difference.

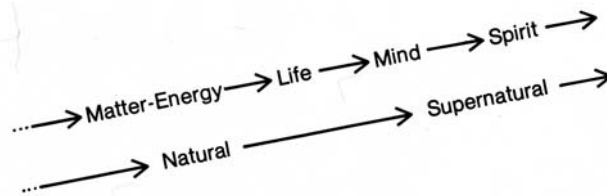


Figure 7.1 Emergent natural states: a storied drama

We must add a further complication. We humans can with considerable success look downward, backward (so to speak) at the matter and life over which we have advanced, making relative sense of these in causal and scientific terms. But the level of mind, at which we stand, and the level of spirit, now incubating and toward which we pass, lie on the frontiers. They may well surpass our capacities for self-referential explanation. We can expect our human-made sciences to stumble over them. Things are going on in our heads that are over our heads, just as things were going on in earlier performers that were over their heads. The emergent steps currently in progress are, and will remain, super-to-the-natural, supernatural from the vantage point at which we stand. Actually, this grants too much to our capacity to fathom matter, energy, life, and information naturalistically, for even these phenomena outdo our capacities for analysis. But especially as mind and spirit emerge out of matter and life, our analysis stalls at the cutting edge on which we live historically. Here the category of the supernatural, past the natural, becomes more urgent and inevitable. It is this power in nature to move over our heads toward increased spiritedness that we call supernatural. This inexhaustible open-endedness is greater than we now know, or can foreseeably know.

At this turn of thought, we want naturalistic explanations that are open toward being subsumed under a *super* account. The upper-level accounts cast their light back across what might in short-scope perspective have seemed complete naturalistic accounts. They cast shadows over them. The earlier events begin to figure as subplots within a larger story. Afterward, the scientific explanations do not look so compelling, exclusive, or nonnegotiable as they earlier did.

It is not, for instance, the impressive consensus within evolutionary theory about the upslope directionality of the life process that impresses us. It is the chaos of indecision and nontheory about life's critical turnings. This softness drives the religious interpreter to use additional premises not found in science. It is not the satisfactory capacity of psychology or sociology to explain human nature and to generate meanings for personal or social life that extinguishes our religious impulses. Rather, their limping causal explanations and their stuttering incapacity to supply enough meaning to locate the ego in its environment prompt the theologian to invoke principles past all natural science and social science. It is not the capacity of physics, biology, neurophysiology, psychology, sociology, anthropology, or any other science to explain how subjective consciousness, with its center of experience, arises out of objective nature, devoid of felt experience, that satisfies us. It is the utter mystery that remains in their silence as to how this happens.

To believe in the *supernatural* is to believe that there are forces at work that transcend the physical, the biological, the sociocultural. These spiritual forces sway the future because they are already breaking through and infusing what is now going on. To term these *supernatural* forces, transcending *natural* ones, is not to make an absolute bifurcation between the secular, natural, and the sacred, spiritual, realms. It is not to posit forces antinatural, unnatural, or foreign. It is only to speak from our present vantage point and believe in a fourth dimension (spirit) when three dimensions (matter, life, mind) are already incontestably evident and the fourth is secretly and impressively also at work.

Almost anything can happen in a world in which what we see around us has

actually managed to happen. The story is already incredible, progressively more so at every emergent level. Nature is indisputably there, and what are we to make of it? Both good induction and good historical explanation lead us to believe in surprises still to come and powers already at work greater than we know. For all the unifying theories of science, nature as a historical system has never yet proved simpler or less mysterious than we thought; the universe has always had more storied achievements taking place in it than we knew. To suspect the work of spiritual forces is not, in this view, to be naive but rather to be realistic.

When Jesus likens the kingdom of heaven to the seed growing secretly, using (as he often does) the natural order as a parable of the supernatural, he does not make a merely heuristic use of fortuitous, disconnected analogues. He draws an ontological bond between nature and spirit. The power organically manifest in the farmer's field is continuous with the power spiritually manifest in the kingdom he announces. To put the matter into contemporary idiom: the spontaneously evolving Earth, bringing forth its seed and harvest, secretly hides the Spirit of God. The biological miracle is a preface to the later-emerging, still more marvelous, realm of spirituality. No doubt there is a natural autonomy in the biological processes. "The earth produces of itself [Greek: *automatically*]"⁴ But there is a fuller account. The Spirit first gives organic life, and afterward still more abundant life. In the communion that Jesus institutes, the bread and wine remain what they naturally are, but they also become sacraments in the fuller context of his kingdom, as this is launched in passionate tragedy. The Spirit adds meanings continuous with, but influxing over, the former values.

Superintending Levels in the Earth Story

Each of the *supervening* levels piggybacks on the precedents, but so far from being reducible to the precedents, each takes the earlier levels under its superintendence. Organisms are material and energetic, but they inform matter and energy according to their novel programs. Mind is based on the brain and hand but comes to direct these. How many diverse mentalities and careers are possible choices for one individual, options for one brain and pair of hands! Culture is based on psychological and organic life, but thousands of historical cultures can be superimposed on the one kind of psychological-anatomical structure that is common to all human nature. The control of the successive material-energetic states is not so much "from below" as it is "from above." To believe in the supernatural is to believe in downward causation on this historical scale, that the upper levels are controlling the lower, even while there bubble up from below the materials and energy, the nested sets of possibilities, on which the upper-level drama emerges and proceeds.

We have in this more comprehensive theory to add arrows reverse to those that we first met chronologically (Figure 7.2). The macrohistory draws the microhistories after it, although the microhistories (genetic mutations, individual careers and choices) emit the novelties that perfuse the macrohistory. There is something now on the historical scale that seems reminiscent of the randomness and interaction in physics in relation to living organisms, although physics omits history. Something acts as a sieve to catch creatively the fortuitous histories; something acts as an

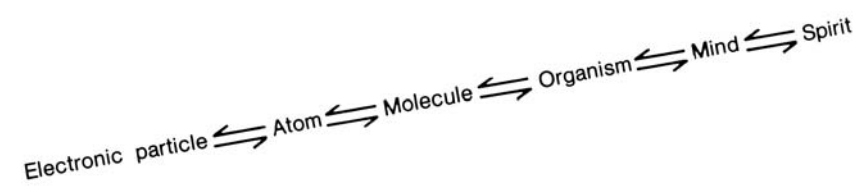


Figure 7.2 Superintending levels in the Earth story

interaction apparatus to call forth this world course and not that one from among the nested sets of historical possibilities. Each later level is taking up into itself the mechanisms and processes that preceded it. Each has to be understood in terms of something higher than itself. Just this sense that human affairs, emplaced in the natural history, are being implicated into something higher is a sign of the divine presence. We will expect here a sense of rationality mixed with that of mystery. Faith is an openness to the next higher level, to things not seen.

To believe in the supernatural is to take the epiphenomena seriously, despite the fact that we have as yet no scientific theory that gives much of the unity we seek in the emergence of these successive phenomenal stages. *Life* does appear, and afterward *mind*, but are these (as hard naturalism maintains) nothing but epiphenomena, nonrevelatory and adventitious episodes that provide no key to the nature of nature? If, as theists hold, *spirit* is likewise detectable, is not this noblest of "epiphenomena" more revelatory still, to be enjoyed as a critically emergent category, not explained away as a fluke? This exceeds science. It exceeds even the natural, as the "natural" can be currently referenced. But it does not exceed experience. To the contrary, it is faithful to experience, more so than are simplistic reductions of everything to matter and energy.

We have within ourselves marvelous evidence that mind haunts and transcends (however much it is grounded upon) matter in a spatiotemporal matrix. Consciousness is something more than a material, spatiotemporal affair. At least where we ourselves incarnate matter, outwardness is only half its face. There is an inner face, seen surely in the quasi-empirical, psychosocial dimensions of mind, seen, we may as well believe, in the dimensions of spirit. Emergents lie so startlingly around, behind, and within us that it is too conservative not to believe in one more. So much self-transcending in nature has already taken place, so much surmounts earlier, lesser natural modes, that it is no great stretch of thought to believe that the superseding of nature is greater than we know. A further, supernatural power would not be any more or less miraculous than what has already taken place under so-called natural powers.

To believe in the supernatural is to insist on keeping the concept of the natural open-ended, to refuse to close the system. It is to listen for supersignals. It is to take an aerial view. This is a high-order antireductionism, which is no more prepared to reduce the spiritual to the natural than it is to reduce the psychological to the biological, the biological to the physical. Aphoristically put, to believe in the holy is the ultimate holism. It insists on the truth, but nothing less than the whole truth, the holy truth about the forces working for expression in our world and in ourselves.

Some will complain that in this account we are forgetting how the later stages

—mind, life, spirit—did not, in point of fact, exist at the earlier times (although nature even then had the potential for their subsequent production). Supernaturalists do not want to say merely that spirits, like minds, later emerge. In theistic creeds at least, one wants to believe that Spirit is omnipresent and eternal, always there, regardless of chronological unfolding and structural development. The movement is not only *to* spirit; it is *from* Spirit.

While this is true, and reveals some inadequacy in our approach, we have only indicated how the category of *spirit* is credibly to be reached "from below," not what more can be done with it upon reflection "from above" once it is obtained. The deploying of this category back across the whole, moving from emergent spirits to a superintending Spirit, requires doubling back over the whole from the later end. Physicists, who come from the former end, will think that matter-energy, primitive nature, has always been there, present from the start and persistent in all the transformations that form natural history, the promoting substrate for everything. However much this may be true, theologians will think to the end, think back from this end, and think that in view of the momentous outcome that the world stuff reaches in ourselves, a fuller account will need enough explanatory power en route to bring the precedents up to their narrative outcomes. It is this latter power that is elemental, not the particles that first appear in the phenomena. And, as we have seen, even the physicists who think back to the beginning, and who think about those anthropic constants with which our world is so fortunately constructed, have also to puzzle over whether the end is not somehow controlling the beginning.

We can say, in short-scope perspective, that life is immanent in the organism, in the DNA. But this is only half the truth. Life requires transcending relations. It takes place in an environment and is nourished and shaped by it. The ecology is as vital as the biochemistry. Further, over time there is a transcending of individual organisms and ecologies, with their local powers, by dramatic evolutionary developments. More and more life appears, as the system elicits advanced life, and the individual organism becomes a story link. The intelligibility of the process is only partly immanent in the organism; it ultimately transcends the organism and is resident in the system.

The Divine Spirit in Historical Nature

But to put this in a theological perspective, even the system is animated by the Spirit of God, a Spirit-field, known to prescientific writers as the Divine Wind (Greek: *pneuma*, wind, spirit), which transcends and makes itself increasingly evident in the storied developments. Spirit animates the whole. The Spirit is, in Judeo-Christian conviction, the giver of life. Here theists actualize or reify what naturalists are willing only to call disposition or potential, but even naturalists must somehow manage to think that some such capacity was always there, even in the absence of its manifestation, at least enough for what has managed to happen. In this, theologians are simply positing enough premise for their conclusion. They too want a unified theory, but they prefer to explain the less in terms of the more, not the more in terms of the less.

Theologians explain the beginning of the drama in terms of the end, not the end in terms of the beginning. Causes are what they are from the start; a story is

what it is at its end, more than at the beginning. Theologians have an a posteriori and not an a priori position! They adopt here the advice of Jesus that we can best know a thing by its fruits. The whole material-energetic performance stands under the narration of Spirit. On the one hand, they are taking emergence seriously, but on the other, they believe that the emergent phenomenon of "spiritual forces" cannot be dumbfounding, but must have its explanation in a Spirit implicated over evolution. "The end preexists in the means."⁵ God lies at some order of magnitude and level beyond the superposition of quantum states, beyond the trans-space-time ether-foam, beyond the anthropic arrangements; God is the supernatural out of which nature congeals. In this sense, God precedes that which follows—matter, life, mind, spirit—being revealed progressively in, because omnipresent in, the *superb* evolutionary sequence in which more *supernature* emerges within nature.

By now, alert to these storied developments, we have to be careful about thinking that there is no interruption of the routine natural or historical orders, since there is no such thing, ultimately, as a routine natural or historical order. Every historical and natural sequence is unique. It is not so much that the laws of nature are never interrupted as that they never more than partially explain the idiographic narrative, which is always being interrupted by chance, or mutation, emergence, creativity, decision, resolution, or surprise. The particular is always something else than natural laws or historical trends can fully specify, something significantly autonomous from its precedents and determinants. If natural law, historical trend, causal sequence, mere randomness, or their combinations will not catch this element that puts meanings into the adventuresome plot, is there anything else that can? The theistic answer is that of Spirit brooding over history.

God is present in the natural-historical world somewhat as the person is in his body, and as the organism is present in mass-energy, not to violate it but to superintend its processes, although there will also be emergent dimensions in this superintending of which we have little inkling. We may remember, too, when using the former analogy, that we do not understand human action in the body very well. Indeed, at the crucial points of the interaction of the subjective mind on its material body we understand little indeed. The extension of the model of the human in his body to God in the world is the sort of deploying that is bound to distort a model. God is not local, as are individuals-in-the-world. Nevertheless, the model can suggest how God is incarnate in history, narrating it, as the person uses his body to narrate a career.

That would be more supernatural than anything that the present sciences can describe. But it would be a form of the supernatural with precedent, sacrament, and analogy in the experienced reality of personal, earthen life. This view would want even for God a passage through the world in narrative form. The universe, Earth is God in the story mode. The historical form of such explanation will be more adequate to nature than the best of merely lawlike scientific explanations. It can reach the level of meanings beyond causes. It reaches for the sense of the Presence of God, the Divine Thou inhabiting the It world.

God and nature become ends of a progressive spectrum, one spectrum viewed from alternative ends, although this claim is made relatively, from our reference frame in this universe, and is not an absolute identification of God and nearby

nature. In this spectrum there are quantum jumps, both microscopically and macroscopically. There are emergents and natural selections that lead to a constructive upslope. This development continues across moral and spiritual unfoldings to orient successive cultures, despite their wandering tragedies. To believe in the supernatural is to believe in the Kingdom of God in our midst. It is to believe, using a poetic metaphor, in that lofty land where the great mists lie, but from which also the great rivers spring. Nature's most startling mystery is this river of life and spirit that flows from on high.

2. SCIENTIFIC-EXISTENTIALIST THEISM

We turn next to options within theism. As with the naturalisms and Eastern religions of the preceding chapter, we are giving only outlines and not documented historical specimens of faith. But we do try to portray essential, paradigmatic attitudes toward science and religion, toward meanings and causes, nature, history, and God. We are arranging these, moreover, in terms of reaction patterns to science, and not asking about theism in categories that might arise in comparative religion.

We will be both describing and criticizing each as we go along, reaching what evaluative conclusions we can, though we want to say of theism in its creeds about God, as we have said so frequently of science in its theories of nature, human nature, and culture, that we have at best a fallible knowledge of open systems. We "see in a mirror dimly," not "face to face."⁶ In such an epistemic condition, one must make an appreciative survey of the strengths of each creed. But one wants, as we have so readily done with the sciences, to attack the soft underbelly of each creed, an attack that will be the likeliest route to further truth. "Iron sharpens iron, and one man sharpens another."⁷ But we do not close with criticism; rather, with an invitation to live the truth in a historical, critical drama.

What we will call *scientific-existentialist theism* must bear a hyphenated name because it tends toward a dualism or, more favorably, a complementarity between nature and God, between the objective and the subjective dimensions of reality. The "scientific" half of its name cedes entirely to science the outward realm of nature and of cultural history as this is a consequence of causal forces. But the "existentialist" half of its name defends intensely the privileged inner core of spirit, the province of religion with its detection of meanings. With the other theisms, it is convinced of a realm beyond the natural, beyond science. It believes in the supernatural, but does not try to locate this within nature or history. Rather, we look for it within the existential self. By this acceptance and delimitation of the two spheres, scientific-existentialist theism becomes at once the most "scientific" and the most "spiritual" of the creeds. But the cost of this achievement is unclarity about the intersection of the two halves of the creed, or, in other words, about the unity of the story of God, nature, and history.⁸

God beyond Nature

The conception of God's acting in nature is essentially deist. God created the world, but assigned to it an autonomous integrity. God is not now immediately present in

nature, nor does God violate it. Nature is a self-contained order, neither overseen by God's immanent hand nor perforated by miraculous interruptions. From the viewpoint of the ongoing natural order, there is nothing supernatural, and we may expect science to achieve ever more rigorous and complete explanations of events in the natural world. These will be causal explanations, but whether or not this will prove a fully determinist view is irrelevant to the main claim. Perhaps nature includes some random or statistical elements; perhaps it includes free decisions by persons.

But we do not try to reserve any gaps for God. The world goes its spontaneous way, chartered by God, sustained by God, but not now directly guided by God. Science will discover a thoroughgoing rational orderliness, inclusive of any indeterminisms, random mutations, nested sets of quantum states, historical possibilities, and the like. God will not be needed as a hypothesis in the scientific explanations of natural events. Rudolf Bultmann maintains that God stands outside of what we call nature and history; the objectivity that can be studied by scientists is "a closed continuum of effects in which individual events are connected by the succession of cause and effect. . . . This closedness means that the continuum of historical happenings cannot be rent by the interference of supernatural, transcendent powers"⁹ *"God stands beyond all the great powers of nature and history. . . . Here, in this realm, God is not to be found! . . . He is beyond them. He is their source; for from him are all things."*¹⁰

We fall at once into bad science and bad theology to think otherwise, although this has been the most recurrent flaw in the interrelations between science and religion. As a result of maturing over four centuries of dialogue, we are now growing out of those conceptual confusions in which religion tries to make scientific claims, preaching something to science about God in nature, while science tries to make religious claims, progressively thinking to chase God out of life. Norman Perrin writes, "The world of nature and of history is a closed world in which God cannot directly be known. . . . Nothing is more pathetic than generations of theologians finding God in a realm which the natural scientists of their day have not managed to explore, only to find that the next generation does explore it. . . : The very idea of God as an effective cause at the level of the natural world is simply and basically incompatible with a true concept of God." It is "theologically obscene" and scientific "nonsense" to think of God as acting in nature.¹¹

Such an older view is *myth*. Myth is the portrayal of the divine activity as if God were objectively out there in natural events, while in fact the divine activity lies in the inner, subjective life. Believers have projected inner events outward, unaware of what they were doing, as Freud helps us to see. So believers speak of God as acting to do this or that—creating life, forming Adam and Eve, moving winds and waters at the Exodus, sending lightning to consume Elijah's sacrifice, or rolling back the gravestone and resurrecting Jesus—while all these are in fact parables of inner, spiritual events. These existential events are not illusions, but genuine experiences, contrary to Freud. But the belief that God is superintending or interrupting natural processes is an illusion. Science drives the myth out of religion, finding causes where events were before alleged to come to pass by God's immediate command. The realm of nature must be *demythologized*, with benefits alike for science and for religion.

Traditional theism (even in what we will call its transscientific form) is faulty because it has not yet adequately cleared its house of quasi-causal claims. It keeps protesting that scientific explanations are causally incomplete; it wants to hide God behind quantum states, or genetic mutations, or brain synapses, or decision options and unique events, as an upper-level overseer of lower-level causal processes. It wants a ghost in the natural machine. All this is to hang on to lingering myth and to remain naive before science. Science may next year or next generation complete its explanations to leave no space for God. Lookers who seek God's tracks in the space-time, material matrix are looking in the wrong place.

The emergent states do *supersede* each other, as we have noted in the passage from matter to life, life to mind, and to spirit within mind. But there is nothing *supernatural* in this, not considered objectively from within the resolving powers of physics, biology, psychology, sociology, anthropology, as these describe chapters in the Earth story. It is only the next highest step that we want to call supernatural, and there look for God. The already accomplished steps, lying behind and around us, can be studied effectively with the categories of natural and social science, or at least with the categories of the historical, which, though they may exceed science, do not require the supernatural. Rather, we should look to what is going on in our heads that is over our heads for the Divine Presence.

God in the Existential Self

By the existentialist account, God directly acts only in the self. Since God is Spirit, God may be expected most appropriately to speak to spirit. We are to look for the tracks of God within our spiritual life—in our anxiety, despair, guilt, decision, repentance, and faith. Consider, for instance, twin themes prominent in the Judeo-Christian faith: love and freedom. Neither is to be looked for in rocks or trees, nor really in animals. These are emergents at the human level. Any precedents we find in mice or chimpanzees will hardly illuminate what humans come to mean by these words, surely not as religious virtues—agape love or responsible moral freedom. The latter are states of mind—indeed, states of spirit. If God is anywhere to be found, it will be here and, for all intents and purposes, here only.

Recalling our discussion of nature and supernature, we must take the epiphenomena even more seriously than before. Consider again (Figure 7.3) the evolutionary sequence, sketched earlier in Figures 7.1 and 7.2. The conclusion to be reached from the emergent states and superintending levels is not that God is everywhere to be detected, alike in levels below and above. Consider, by analogy, how it would be a mistake to try to understand life by studying inert matter, an

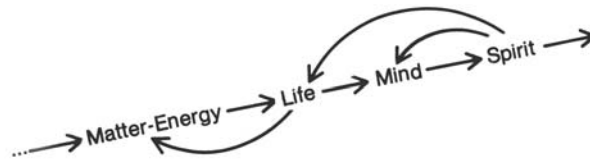


Figure 7.3 The detection of Spirit

attempt indicated by the arching reversed arrow at the lower left. Living qualities are not yet present there. The biologist would be looking in the wrong place if she expected from geology or mineralogy insight into information transfer, reproduction, irritation, or learning. The zoologist will not ask the botanist about sentience.

But so too if we look for spirit where it is not yet present, in biology or neurophysiology (much less chemistry or physics), as suggested by the reversed arrows at the upper right. Spirit emerges with inwardness, but not yet even at the lower levels of sentient awareness or with the merely pragmatic mind. It appears with the sort of higher reflection that comes at the level we call *Existenz*, with a self-conscious being in quest of meanings. After all, religion is about meanings, not causes, and *meanings* are sought only by *persons*. At prepersonal levels, meanings have not yet emerged in conscious awareness. It is thus bad theology and bad science to look for God as one among the causes of events in the natural world. God will be found only at the existential level. One needs an adequate detector. Rocks and plants are not adequate detectors of God, nor is the study of them an adequate place of detection. Persons are adequate detectors of God, at least in their spiritual modes. In the ordeals and joys of personal existence God can and does enter.

Only bad science thinks that it can say anything about good and evil, or the forgiveness of sins, or thinks to guide moral decisions, or to orient the person in love and freedom. Here only religion can serve. In this dimension of life, Christian theism offers saving power and grace. This gift is maintained over the centuries by a cultural education and passes from faith to faith. The gospel is preached and persons are moved in faith, freed for righteous love. The strong Spirit of God is detected here, not in bubble chambers or biological mutations. The Divine Spirit moves the human spirit, not rocks or rain, genes or quantum states. We do not want a *Cause*, for which monotheism has too long looked among the other causes in nature and history. We do not want a *Process*, a model process theists favor. We want a *Presence*, and such a Presence can be found only speaking to self-conscious subjects. God is not an *It* operating on other *its*, but a *Thou* addressing a *thou*.

God in History

Existentialist theists answer the question of God's acting in history both *yes* and *no*. Consistently with their denial of God's immediate presence in nature, God is not present in history, a theme we have already begun and now make more explicit. Norman Perrin, agreeing with Bultmann, is emphatic: "God cannot be the effective cause of an event within history; only a man or a people's faith in God can be that. . . . There never has been and there never will be an event within history (that is, world history) of which God has been or will be the effective cause."¹² Though contrary to what classical theism has believed (and to what transscientific theism continues to believe), this follows from withdrawing God from the sphere of nature. God is not a causal agent in the external events of history, any more than in nature. We now have to say that the mighty acts of God at the Exodus, the Return from Exile, or the Resurrection are myths, if objectively conceived.

But the revision is not as radical as may first seem, because in such events the factors always include human actors, and here God has been intensely present. God

does not act externally in history, but he acts internally within persons, and persons make history. At the Exodus, God does not move the wind and waters. The winds of the Spirit are within Moses and his Israelite people. The Hebrews are empowered by the divine love for freedom, released indeed in the Exodus. But they are not saved by meteorological or tidal miracles, but by their faith, which enables them to struggle through, to give meaning to their journey toward the promised land. Science frees us from believing that God drove back the waters and similar primitive myths of a people who did not understand what was going on in their heads.

But science does not touch the belief, which theology still affirms with joy, that God makes persons free. God moves persons to cast off their bondages and calls them to an obedience of faith. God inspired the prophets and the scribes who preserved Israel in Babylon and by whose self-fulfilling faith Israel returned from exile. Jesus is not bodily raised from the dead; but a spiritual presence that he elicited before his death, by the strength of his personal faith, now reappears and continues in his disciples, who have Jesus experiences, realizing God's saving power within. The Spirit of God resurrects them, gives them new life in Christian faith. God is thus reinserted into history, that is, recognized as being present where God always and only was, mediately in history from the immediate divine presence in the personal life. In this way we have to understand God's presence in history in the Bible, in the American Revolution, or the Civil War, or the civil rights movement.

A Narrowed Story? A God-forsaken World?

In criticizing scientific-existentialist theism, we do not so much want to deny what it affirms (that God is eminently revealed in the personal life) as to affirm what it denies (that God acts in the natural order). Belief in God is possible only for humans (or perhaps extraterrestrial humanoids); it arises and is maintained within the personal life. But the personal life is not a private subjectivity, not a lonesome self defended in a God-forsaken world. Rather, the self is set relationally within an enviroing nature and history. Humans seek the meaning of a self helped or hurt in a natural ecology, incubated in an evolutionary ecosystem. We must deploy convictions that arise at the point of existential personality out across the world and back over history. Any God found within the self has also to be found out there, or else is not God of the whole. It would be odd of God to touch human life so intensely and be absent in the natural world that is our foundation and foil, womb and partner, odd if God cared so much about human *Existenz* and so little for all else. It seems illogical to have nature self-propelled across so long and remarkable a trajectory only to have God reappear in the drama late in time and immediately in subjectivity, bypassing the mediation of matter and energy, in terms of which everything earlier has been narrated. Deist-existentialist theism has a do-nothing God for twenty billion years, before subject selves appear. Even yet God is marginal to these objective forces that are of such enormous consequence in our lives.

Is it not equally credible to let God infuse the whole world-body? We humans are active in the world; our spirits work their wills upon matter-energy. Why cannot God do the same? If not, God is our inferior. We humans must live within this

earthen evolutionary ecosystem, but we did not create such a context for our story. The "earthen vessel" we inhabit is of God. Even scientific-existentialist theists must say this sooner or later, and why not both sooner and later, and all along the way? In the midst of what science says about nature, we still can and ought to expect some embodied expression of the will of God. We may not have a God in charge instantly and omnipotently at every point; we may not have a God who violates the creation with outrageous miracles. But we do want a God who charges and supercharges the creation with divine purposes, a nature exceeding mere mechanical causes. The natural world is suffused with deity, and we ought to be bold enough to say this, and mean it, in the face of science.

Anything less is too limited an account of the presence of God. The world history is not the affair of existential beings only. All nature has an evolutionary history, from stars to planets, from dinosaurs to primates, and only in the last few minutes of cosmic time has cultural history been supermodulated onto natural history. Existentialist theism does not put God in very much history, only in a few of the latest episodes, and only when the actors have the right faith. A God who enters history so recently and reticently cannot be a God of all history, only of fractional parts of it. Here faith has not merely been demythologized; it has also been denaturalized and dehistoricized. We are not given much plot in the drama, little Presence in the narrative. Scientific-existentialist theism fails to give us a united world view. Before the criticisms of science, it has withdrawn into a kind of dualism, a narrowed story. God lives within, but there is only a radically secular world without.

The problem of the packing of God's presence into the lower earthen levels of being (rocks, plants, animals, ecosystems) is not solved by incarnating God only within subjects (persons) and eliminating that presence from objects. Indeed, it is almost as impossible to pack God into the human subject as to pack God into an object, for God vastly outgoes what we know as personal, localized subjectivity. The place to pack God is into the whole story, not just into the subjectivity of the latest of its actors, despite the fact that a self-conscious awareness of God arises only in the latest actors. God is to be discerned as the chief Actor, not as a kind of tutor or inner voice confronting the human players only. God is to be looked for "in, with, and under" nature, history, and selfhood.

Causes and Meanings: The Complementary Languages

The hyphen in scientific-existentialist theism indicates a kind of intended complementarity of object and subject, science and religion, but if this is not handled with care it congeals into a dualism that isolates the one half of the story from the other. We can explore this complementarity by noticing how we sometimes simultaneously use two languages to describe single events. The motion of my arm can be described in terms of muscle contractions, involving A-bands and I-bands, thick and thin filaments interdigitating and sliding past each other, regulated by calcium ions, nerve impulses, the firing of brain synapses using neurotransmitters, the movement powered by ATP hydrolysis, and the like. This would trace an unbroken causal chain, including perhaps a statistical averaging of random events at microscopic levels. But no amount of neurophysiological *causal* analysis could accumulate to

produce the *meaning* of the arm motion, nor could it defeat my knowledge claims here.

I wave to greet a friend. This is talk on a different level. It expresses the intention of a subject, an entirely separate dimension from the empirical muscle movements and nerve impulses. One language gives causes, the other reasons. One is an objective account, the other a subjective account, although not merely of a private experience, but of a subject behaving in the world. The two languages parallel each other as complementary and noncompeting accounts of the same event, two windows into what is going on. Each account can be, in one sense, complete and without gaps or puzzlements. They are utterly disparate ways of knowing and coexist in irrelevance to each other, like independent television channels that never contact each other. Yet each account complements the one that it parallels, giving us further understanding.

Scientific and religious accounts are like this example.¹³ Science is causal, tracing events in natural history or somatic and social processes in human affairs. But religion speaks a different language, about the meanings of these events. Such meanings are always personally and communally held; they have owners. Let us analyze more carefully those theological assertions that appear to be talking about God's activity in nature as though it were independent of the speaker. "I believe in God the Father Almighty, maker of heaven and earth." Theists who say such things are not really making claims about God as a causal agent in nature and so are not making scientific-style claims. They use such statements to report and recommend the meanings they themselves have found in life, experiences of its goodness, of awe and respect felt for the world, of the sacredness of life. Bultmann says, "Faith in creation . . . is not a theory about the past. It does not have its meaning by relating what took place at some earlier time, . . . but rather speaks precisely about man's *present* situation. It tells him how he is to understand himself *now*."¹⁴ The Genesis creation accounts, despite their superficial appearance, are not myths about beginnings, but rather are myths about dependence.

These are really reports from extrascientific territory, existential reports that are made in faith as a result of religious experiences. These reflect and project what is going on within believers as God helps them to find meanings in their lives. These are subjects' accounts of meanings found and confessed, not objective accounts of God's acting in nature. When we recognize this, scientific descriptions of natural processes can come and go, be missing, complete, incomplete, steadily revised, while the main religious claims remain untouched. Similarly, the knowledge that I greet a friend remains untouched by developments in anatomy and physiology.

Scientists can do what they please and theologians are majestically unaffected by it, since they are talking different languages—rather as the lawyers can do what they please and the poets are majestically unaffected by legal innovations, or vice versa. But is it this simple? Theologians do have to write a theology of nature on top of what the scientists have found out; they have to make the best of what the scientists are saying about the processes of cosmology, evolution, genetics, psychology, and the like. Or they have to challenge the scientific accounts by defending experience that reveals logical or empirical inadequacies, or by testing the complementarity of science and religion.

In criticism of the complementary language accounts, we need not deny what is affirmed. Causal explanations and meaning explanations do operate on alternate levels. But, contrary to the isolation supposed by radical two-language accounts, meaning explanations do interfuse with causal explanations; they do not merely run in isolated parallel to them. Arising within the personal life, as meaning explanations do, they are not assertions only about personal life in the world. They are also about God's meaningful activity in the world prior to and independent of God's activities within persons. In an attempt to narrow the range of the divine activity, restricting it to personal selfhood, the existentialist account shrinks the scope of religious claims. The double-language view sees only half their function. Believers are also trying to claim that God works in the world. So whatever causal explanations they can give or accept will have to be of such kinds as are also open to their superintending by an agent of meaning.

In the example of arm motion, only certain kinds of causal accounts can be reconciled with the intentional account. There has to be not merely a parallelism but a complementarity between the accounts. It is not so clear, for instance, that causal accounts can be complete and closed, especially in the cerebral traces, certainly not rigorously determined. There must be some spaces that can, from the other side, be seen as decision points, where the intentions of the "I" are expressed and modulated onto the causal sequence. There must be some gating at the synapses that is open to options, and hence an incomplete scientific account of the changes. In any case, the two languages are not describing two territories as insulated from each other as might seem. When we use them to describe one world we cannot avoid questions of interaction on their frontiers.

In the example of Creator-creation creeds, there is asserted personal dependence on God, and such dependence involves ongoing, continuing creation, but also there is asserted an original, start-up creation. While a great variety of causal accounts are compatible with the monotheist meaning account, not all such accounts are. An account that claims final adequacy for naturalistic explanations, or one that claims that life and humans are adventitious or accidental products of the causal process, will be incompatible with theism.

The fault with our analogy between double languages about arm movements and double languages about natural and historical processes is that in the one case we have a privileged access to immediate knowing. I wave to a friend, and I need consult no biochemistry to prove or disprove it. Science cannot touch my claim. But when I say that God creates the natural world or gives meaning to history, I have no such all-commanding privileged access, participant though I am. In the latter case, I am making broader claims where before I was making claims about just my personal experiences. Revisions in the descriptions of natural and historical processes can and often do force revisions of my claims about meanings there, as has steadily happened in the sciences originated by Newton, Darwin, Freud, and Durkheim.

Scientific explanations are not all and equally agreeable to meaning explanations; some are more congenial, some less so. What theists hope for is not merely the experience of meaningfulness had in disregard of the operations of the natural world, even if this experience is given by aid of the divine Spirit. They want to discover an appropriate meaningfulness by thinking God's thoughts after him, by detecting

providence where it has been inlaid all along into the world, not merely as a gift erupting in the late-coming believer's *Existenz*. Scientific findings of intelligibility and order, for instance, go reasonably well with the theist's discoveries of meanings there, although the deistic God is rather remote from the creation. Darwin's descriptions of a junglelike nature have tended to dislodge belief. We cannot assume that causal explanations have no impact on meaning explanations, or vice versa. We do have to worry about conflict and incoherence between models, and complementarity cannot be assumed; it has to be wrestled with. The boundaries between languages and those between models are permeable, and the history of dialogue and warfare between science and theology is a result. We have to seek peaceful coexistence, not mere parallelism.

Meanings emerge in the personal life, but they do so in an evolutionary matrix where what were earliest causal processes are transformed into what in humans are meaningful processes. Do we find only a late, epiphenomenal parallelism of causes and meanings, and no productive evolution from the one to the other? Is evolution perhaps a prefixed, perhaps a more or less random unfolding of a spontaneous secular order? A unified account will need to discover more divine activity all along the route. Those genetic propositional sets, those programs defended in plant and animal lives, the pleasures and pains of sentient life, learned animal behaviors—all are valued precedents for the meanings that are found still more gloriously in the personal life.

Meanings need to attach to the systemic, storied whole, in such way that God does not just enter the drama in private lives or in faith communities, but is always there intelligibly and effectively. Believers cannot convincingly discover meanings in a world from which God is objectively remote. It will not do to posit some once-for-all setup at some aboriginal beginning, God's archaic creation of a nature that is thereafter an autonomous process. That is still to believe in a special creation and not in the continuing creation of God. The world needs God all through its course, not merely at the start as First Cause, or at this recent stage as Giver of Meaning in human lives. The causal and organic mechanisms operating out there need to be closely coupled with divine Presence. God is the Spirit brooding within the whole natural process, not merely the Spirit within our spirits. "Only if God is revealed in the rising of the sun in the sky, can He be revealed in the rising of a son of man from the dead."¹⁵

Existentialist theists try to be so scientific, but in some ways they fear science quite as much as they embrace it, and have therefore withdrawn theology from the province of the natural order. But this is premature and naïve about what science has already accomplished or gives reasonable promise of accomplishing. Impressive though scientific explanations sometimes are, they are very incomplete overall; and the better they get, the more they have a soft side, one open to God. This open texture is found not only on the frontiers of science, but again and again at its conceptual cores. The most recent "myth" that needs to fall is that of science as omniscient and omnipresent explainer of natural events. That is scientific nonsense. Perhaps God will not be needed in scientific explanations as such, but scientific explanations can never give a rigorous, complete account of the idiographic historical narratives in nature. Against Perrin's complaint about "pathetic" theo-

gians who try with "obscene theology" and "scientific nonsense" to find God among the causes, it is "pathetic" to find theologians who have lost their nerve, withdrawing all claims about God's activity in nature. That, if anything, is "theologically obscene." Natural history too needs to be sacred history.

3. PROCESS THEISM

The second option we examine has incorporated the most from the categories of natural science into its concept of God. In that sense, it is the most scientifically sensitive of the theistic schools, radically extending science into metaphysics. Neither does it hesitate to make radical revisions in theism, nor does it mind superseding science where science impoverishes experience. In this account everything gathers around the word "process," symbolizing the dynamism that science depicts in the world story, incorporated now in the concept of God.¹⁶ The resulting view supposes a powerful but not omnipotent God who transcends, but is in immanent interaction with, a processive nature that is neither originally nor entirely the divine creation. Nature and God both are limited and affected by each other. Process theism has (in the West) largely replaced monisms, which have gone out of style with the increased revelations of a processive, energetic, historical nature. Monism fixed on too much Absolute, and did not allow enough Divine Process.

Nature Is Organic Process

The twin themes that are paradigmatic for any concept of nature are change and organism. Alfred North Whitehead writes, "Nature is a process of expansive development, . . . a structure of evolving processes."¹⁷ We do not anywhere know nature except as it is *becoming*. Nature is not (as earlier theisms supposed) the passive product of the divine will, not a crafted material, but is itself active, energetic, creative, with its own integrity, if also containing a dimension of the divine will. Further, although we know organic nature only on Earth, the relatively simple structures of preorganic nature have to be interpreted in the light of the evolutionary ladder on which they are the lowest steps. That ladder is organismic, not mechanical. Whitehead continues, "The whole point of the modern doctrine of evolution is the evolution of complex organisms from antecedent states of less complex organisms. The doctrine thus cries aloud for a conception of organism as fundamental for nature."¹⁸ There is ever a flux of things, never permanence and substance, but in the flux there are relatively enduring patterns that spontaneously appear and ramify. These loci of development have a gathering tendency. Lesser units are aggregated, pulled into orbit, bound, becoming wholes as composites of parts. At lower structural ranges, there are what Whitehead calls packages, pacts, "societies." At advanced levels, there appear organisms. Reality is not only dynamic and particulate, but social and creative. Our most mature view of nature is one of generation, beyond causation. There is a pressure to fill up many ontological niches, to make something actual for every possible slot. The prelife events are, one can say, merely physical and not biological; nevertheless, there is something generative about them that links

them on toward organism, as will be seen over the long-range cumulations of the spontaneity and creativity that are always latently present, however dimly executed, in the simplest of phenomena.

In ourselves, the complex corporate events that constitute our bodies have a mental side. At the lower levels, rocks are composites of minerals, which are aggregates of atoms, and have a dominant physical side. But there is an evolutionary construction from the one to the other. There is emergence here, but also we need an overlapping of the physical and the psychical dimensions of reality. If we consider life at the level of, say, an oyster, there is striving. A life program is defended, although there is no conscious cognition. By extension, we can think of "inorganic" events as having a kind of apprehension, although it may be low-grade.

Only in this way can we explain what does in fact happen to inorganic materials, albeit rarely so, when they assemble into living forms. Over time, they do get somewhere, and so we assume that this attenuated pole is always nascently there, even when obscure and weak. It is spirit immanent in matter, a harbinger of things to come. Process theists do not object to being called panpsychists, believing in a psychical dimension to all nature. It is as logical and economical to think of spirit as being diffused and inchoate in matter as it is to posit a supernatural Spirit who stands outside and inserts it, or a deist God who is the remote Architect of a secular world-mechanism.

By contrast, a traditional monotheist will want to say that Spirit is transcendent to matter. When we say that atoms or rocks have the potential for being restructured into humans, we do not have to mean that the human properties, such as the psychical, are already there in rocks and atoms in some scaled-down way. One can with equal plausibility hold to a genuine potential and to the creative act that takes place when there is novel emergence so that things appear (mental qualities) that simply were not there before. The traditional monotheist, of course, will want an explanation for this creativity, which lies in the Spirit of God, the giver of life and mind. But such a monotheist does not have to put the explanation in a diffused and inchoate, rudimentary spirituality present all along in matter.

God Is the Ground of Order

Clearly, there is some assemblage of natural properties that provides for order. Laws hold, energies persist, conservation is maintained, structures are produced, organisms reproduce, and there is much logic in things. While some take this as a brute given, it bears further reflecting upon, and we may consider God to be the ground of order. The process God does not create the world *ex nihilo*, contrary to traditional theism. Nature ever coexists with God. But God supplies the order that is mixed with disorder in nature. In this sense, science is the first witness for God, since it finds order permeating nature. At a foundational level, this order is *causal*, sometimes mathematical, sometimes nonmetrically logical, and in other cases the order is regular but with operations that so far escape our logic.

But this order is also *meaningful*. Natural things come to carry meanings that intensify with the accumulation of complex event structures. "Order" is thus a term that begins in science but crosses over into religion. It bridges both disciplines.

Considering God as the ground of order, we can find God more evidently omnipresent, not only in the higher living creatures, but in lower structures, such as atoms and minerals. Although the organic and spiritual dimensions are inchoate and attenuated at low levels, the omnipresent order still attests the divine presence. "One of the attributes of God," says the biologist Edmund W. Sinnott, is "the Principle of Organization."¹⁹

God Is the Ground of Novelty

The order is not static. Nature continually displays fresh introductions on its cutting edges. There is both continuity of process and the emergence of genuine novelty. The future is more than the past, linked with it, but an adventure elsewhere. The natural system has its trends, but also its openness. Development is not the mere unfolding of inevitable clockwork. There are crisis points, options, opportunities, exploits, which give to nature its idiographic, narrative features. These make history possible, including the human history that overtops natural history. In the evolutionary movement from matter through life and mind (though science perhaps only approaches spirit), science is a second witness of God—just because science, with its featurings of causal regularity, poorly handles the innovative face of nature. The missing or disputed element in any evolutionary model is what Polanyi called "the orderly innovating principle."²⁰ Yet every attempt at explanation stalls without it. In reductionism, things "fall apart" into components. But what we want to know is why things do not fall apart but come together more and more.

We do not need to know about parts in their analysis so much as about the principle of their synthesis. We can expect, penultimately, better scientific models that gain increasing insight in naturalistic terms about how this synthesis took place. Yet such accounts, however relatively satisfying, will have an open side, invisible to science, that permits interpreting the orderly innovating principle as a sign of God. Like "order," "novelty" is a word that crisscrosses the languages of both science and religion. Causal explanations get toeholds, no more, on why this novel route and not that one is taken, or why there is novelty at all, why wholes are more than the sum of their parts. Novelty hides behind such terms as "random," "statistical," and "epiphenomenal." Religious explanations use this novelty to insert adventure, self-creation, local integrity, decision, and moral responsibility into the world story. God loves surprises, as God loves freedom and spontaneity. God both permits and insists on these, and in such way as gradually to innovate more and more of them, consistent with the constant divine aims. These are signs of the divine creativity interwoven with divine order. "Apart from the intervention of God, there could be nothing new in the world, and no order in the world."²¹

Thus, God is the source of the transformative principle that soft naturalism had supposed to lie inherent in nature itself. The process theist does not have to ascribe to God the existence of nature, nor its mere changing, nor all the options taken, nor all decisions made, nor nature's chaotic elements, nor its decay. God can be used selectively to explain some but not all of the phenomena, namely, the persistence of order and the recurrent introductions of novel developments. God is a relative explanation, not an absolute one, a partial explanation, not a complete one.

God Is Creative Persuasion

Process theism wishes to provide an overall aiming for the stories of nature and history, and at the same time to leave much up to local spontaneity. God presents possibilities in excess of actualities, together with a heading, but then draws back to suffer the entity its own increments of freedom. The routings taken are not all inlaid into the anthropic constants of the big bang, not all thrust up from superposed quantum states below, but they are actualized in part owing to elections that the organic entity superposes on the quantum states. There is provision for cocreation and continuous creation. God is the ground of creativity "from below," and yet aloft, aboveground, creativity is removed from God enough to be assigned locally to the creatures, who actualize themselves. They do their own thing, always in God but not always of God. There is the kind of parenting that puts local integrities on their own and yet educates them as they go. This influence is not mandatory or deterministic, but enticing, prompting. Process theism wishes to have it both ways on the question of historical inevitability. There are aspects of knowability and aspects of unknowability.²² The shadow of the past outlines the future, but more. The shape of the future has lured things past "from above"; divine wisdom has outlined their routes, at once creatively yet also leaving their idiographic tracks up to them. Process theism supposes "soft" rather than "hard" directionality in history, but this is commended as a strength in its creed, and in God.

To some extent this conclusion is reached out of science, and to some extent this continues from, and reacts to, the religious heritage, especially Christianity. Science depicts plural natures, distinctive entities, nested sets of communities with crisscrossed historical lines, populated with private individuals, not marionettes. Biological science has its organic selves. Behavioral science needs to place an organism (O) between the stimulus (S) and the response (R):

$$S \rightarrow \boxed{O} \rightarrow R.$$

Humanistic psychology finds egos maintaining their centeredness, self-actualizing (SA) persons, while sociology and anthropology embed them in cultures that transcend the individual and yet are distinctive because of elements of individual self-definition. Our picture is of an open nature permitting multiple histories.

Nature's journey is not by evident linear progress but by the gradual natural selecting of zigzag proposals, trials conserving past successes intermixed with a spontaneous groping for more. Across the spiraling civilizations from the Neanderthals to modern humans, cultures are permitted their local integrities, and yet there is a cumulation of know-how and perennial lures such as freedom and justice. God as creative persuasion explains this in nature and culture, alike in the ends attained and in the open, patient texture in which these events take place. There is a constant, patient God, hiddenly and noncoercively present.

Here, though, theism has often erred in supposing a divine tyrant who oppressively predestines all, ruthlessly overriding his creatures, vitiating their industry and responsibility. In the Bible there is too much of the Oriental sultan remaining from the contexts in which monotheism was first engendered and not enough of the Divine Author who creates for us meaningful roles in a historical narrative. Never-

theless, the better biblical picture is of a persuasive God who wrestles with a wandering people, coaxes them to a land of promise, and who sends a Son, not to bring down fire from heaven, but to set loose the appeal of sacrificial love in the midst of a world of scattered aims and confused responsibilities. The twin divine aims from classical theism, love and freedom, both defy coercion. God can promote such virtues only as an influence operating on creatures who go their own way, subject to persuasion, not coercion.

God Is the Conserve! of Values

A striking feature of the world is entropy, decay, tragedy, death. We do not need to assign these to God. But even more startling is how the life process climbs onward through shifting environments for almost everlasting millennia. In ecosystems, some lives are built on others. Nutrients, energies, and information all flow around and up through the system. In cultures, persons pass away, but their traditions pass on. Aims continue in the midst of a flux that might seem only to crumble them. Waves are transmitted and reincarnated across a succession of particles. Events in evolutionary and cultural history (as with the emergence of hemoglobin or the signing of the Magna Carta) have importances, which is to say that they are "imported" over to succeeding lines. There are losses, false starts, and dead ends; but these are replaced and recovered by new breakthroughs, with the same endings achieved by different routes. The most adequate explanation of all this is to regard God as the husband of values. Such a faith flies over the drifting vicissitudes of natural history, but it stays aloft because it perceives how natural selection preserves and innovates value, not mere survival. Process theism detects how the cultural heritages in their main currents are meaning systems in which the noblest aims are selected for transmission over the centuries.

Broadly, one can affirm with Whitehead, "There is no loss," despite the wreckage and transience of the centuries. God "is the poet of the world, with tender patience leading it by his vision of truth, beauty, goodness." That is to speak poetically, and the prose behind it is the world narrative in which values are distilled off and conserved over historical time. This permits an account of God as the "fellow-sufferer," before the cruciform character of nature and history.²³ A divine urging empowers the life forms to suffer through to something higher, achieved as this must be by the sacrifice of individuals (as with the pelican chick or the anemic African child) in behalf of the communities in which they participate.

We do not here say, as might classical theism, that God foreordains all these details, or even that God wills the fabric within which God works. But we do say that God is present to guarantee that any value that can be will be conserved out of the suffering. Charles Hartshorne assures us, "God is . . . a sympathetic spectator who in some real sense shares in the sufferings he beholds. He is neither simply neutral to these sufferings nor does he sadistically will them for beings outside himself. He takes them into his own life and derives whatever value possible from them, but without ever wanting them to occur."²⁴

The Becoming God

In common life we take things that can grow to be superior to things that are static. Thus, a person, who can learn and be creative, enjoys a richer level of being than an inert rock. But how much of this applies to God, the Rock of Ages, the same yesterday, today, and forever? Process theism complains that classical theism erred in exaggerating invariant permanence in God. Nature becomes, and why not God? Process occurs in God, and process in nature reflects this. Whitehead concludes, "A process must be inherent in God's nature, whereby his infinity is acquiring realization."²⁵ God is no exception to the historical and evolutionary flow that is the chief feature of the world; God is, rather, its chief exemplification.²⁶ God is enriched relationally with the world; each contributes to the other. God and the world are engaged in a sort of feedback loop. God too comes into reality. The divine consciousness perpetually receives additions from the world. God is capable of additional values, and pursues them in Earth's history. "The Creator too is in process of being created, not simply self-created or simply created by the creatures, but the two together."²⁷ God, adds Hartshorne, is both the "supreme source" and the "supreme result" of the world process.²⁸

But although process theism posits becoming in God, against immobility in older theism, it has found this difficult to clarify without dimming the divine omnipotence, perfection, and even reality that theism has long cherished. The changelessness of God is God's constant purpose abiding over the fluid millennia. But should we think of something in God that matches the emergence of richer levels of being (life, mind) out of the simpler things (stars, atoms)? Whitehead says that God primordially is "actually deficient, and unconscious," and only consequent to experience in the physical world does God become "fully actual, and conscious."²⁹ We are first tempted to think of God's evolving where earlier there was nascence, or of God's waking up to new levels of sentience or awareness, as did the sequence of creatures over time. It might seem as though God gains more power with more becoming. Later on, God is more successfully persuasive, though not more coercive, since the latter is unbecoming to the divine will. Does God gain more information, and does this make God formerly not omniscient?

But when we subtract all notions of temporal becoming over time, which characterize the creatures but not God, we have to say that God always is in interaction with physical nature, which always exists whether in this epoch or earlier or later ones, and thus God is always both primordially unconscious and consequently conscious. God's becoming is without going. But then just what categories in the developing natural history does God so supremely exemplify? Or does development in God not really involve anything like the emergence of matter and energy from the primordial plasma, the emergence of life from matter, or of the subjective within the objective, the complicated from the simple, even though these goings on originate with God and are reflected back to enrich God?

It is difficult to portray God as becoming more and more yet not be chronological about this. The cardinal feature of natural history is coming into being over time, even though relativity theory has taught us to wonder whether nature is ultimately spatiotemporal. Process theists have accounts of God's becoming along the lines of

the actualizing of potential, accounts of nontemporal originative and consummatory phases in God. They manage to portray God as primordial and transhistorical becoming that is always fully actual. Perhaps they do not need a developing God who reciprocates the development in the creatures. But the notion of a changing God, who reflects the evolution in nature and history, has often suggested some evolution in the divine actuality. God too is in part created, and continuously so, a "result" as well as a "source."

Religious Adequacy of the Process God

This in fact opens up a series of critical questions about process theism, which gather about the religious adequacy of the process paradigm. Process is not Presence, not obviously so. Is this Process something to which one can pray? Is it nonpersonal, more like negentropic gravity, a lure rather than a Person? Can I address God as a thou? Is this what Jesus called "Abba," Father? Is the divine process so different, really, from the transformative principle of a nontheistic soft naturalism, which we found vaguely reasonable so long as it was kept reasonably vague, but which at closer look fell short of offering an adequate explanation of, or guidance for, the personal lives we are called to lead in history? In their concept of nature, process theists want to extrapolate back from personal experiences of becoming and find anticipations of psychical experience not only in organic but even in abiotic nature. They want to interpret evolutionary nature from the conclusions reached in ourselves, and not mechanistically or energetically in terms of physical particles. This is a "philosophy of organism."³⁰ It is also true that they want to attenuate the intensity of these psychical experiences as one moves rearward and downward on the phylogenetic scale.

But when we turn to God, who is supposed in some way to exemplify or parallel, as well as to lure, these developments in history, have we a Spirit who is as personal as, or more so than, we ourselves? Personality, not organism, or even consciousness, is the highest category we know, and anything less than this in God makes God our inferior. God as creative persuasion certainly sounds like a Thou. We are assured of a divine "subjective aim."³¹ We are told that God is always conscious as a result of interaction with physical nature, as well as primordially unconscious. Is that enough guarantee of Presence? Scientific-existentialist theism did well to insist on the presence of God as Spirit to spirit, Thou to thou. It passionately defended a Divine Subject, although it withdrew God's immediate action from the objective natural world. Process theism has what scientific-existentialist theism lacked, an account of the divine activity in the natural world. But it is less assuring about the Presence over, above, throughout the process.

William Temple laments, "If only Professor Whitehead would for creativity say Father, for 'primordial nature of God' say Eternal Word, and for 'consequent nature of God' say Holy Spirit, he would perhaps be able to show ground for his gratifying conclusions. But he cannot use those terms, precisely because each of them imports the notion of Personality as distinct from Organism."³² Transscientific theism, to which we soon turn, will insist on giving God a proper name, not as some one being among others, but with the conviction that the Universal behind the universe, the

One behind the many, is a Presence with a proper name: Yahweh. But it is hard to give God as process a proper name.

We can also agree that God acts as creative persuasion where this is appropriate, eschewing compulsion. We may further want God as "influence" on the natural process, so as to let the creatures retain their own autonomy and integrity, not tightly predestined by the divine will. But there seems no reason to think God absent from the necessities, the compulsions that also control the world and that often overcome us. Science has abundantly, though not exclusively, found compulsions in nature, and we need not banish God from this arena. Else God cannot be significantly found in the lower structural levels, in stars or rocks, where persuasion is not a relevant category, not unless "persuasion" comes to mean something radically different from what it first seems to mean, a minuscule influence over what are overwhelmingly statistico-causal processes. God works in the imperatives of the causal order, crafting forms that are cut in passive dependence, as well as in the education of independent, active selves. Here the notion of God as ground of order, if it is to assure meaningful, novel plot in the story, permits and even requires an omnipotent God at least sometimes closely coupled to the physical processes. Likewise at the human levels, the irresistible goings on over our heads do not always violate and oppress us. They can bless and free persons.

Perhaps the better model for nature and culture is not process but, to revert to a richer category, that of *storied history*. Development, order, novelty, perpetual perishing and the conservation of value, becoming more and more—these are really the ingredients of narrative. In some sense, that is what the Jewish and Christian monotheisms have affirmed all along. Genesis is the story of creation. The Old Testament is the story of a covenant people; the New Testament is a passion narrative writ large. History is God's story, and we can think of storied development even within God in the creative sense that God spins this marvelous story of the universe and its projects, of Earth and its peoples, of the Earth-Exodus into love and freedom, of the ongoing divine Advent here. One can pray to a *storytelling God*, who empowers the actors in the play for suffering through to something higher, rather more convincingly than to a lure in a process.

4. TRANSSCIENTIFIC THEISM

The third option, which we call transscientific theism, is classical theism become modern. It is the most robust of all the competing explanations, the most adventurous beyond (some will say oblivious to) science, and therefore, while it does not object to naturalism in its place, it is the least sympathetic to naturalistic canons. To some it will appear tender-minded and rationally soft, prone to overbelief, but its adherents try rather to be tough critics of weaker faiths, to be the least afraid of demanding more explanatory work than science can do.

God Is the One Who Loves in Freedom

All the classical attributes, or perfections, of God can be brought within the twin themes of love and freedom. We can array them as follows:

God's attributes of love:

God is perfectly gracious
and holy.

God is perfectly merciful
and righteous.

God is perfectly patient
and wise.

God's attributes of freedom:

God is perfectly one
and omnipresent.

God is perfectly constant
and omnipotent.

God is perfectly eternal
and glorious.³³

The symmetries are complementary, as when the divine righteousness is the shadow of mercy, or holiness is the obverse of grace, or when constancy (faithfulness to purposes) yields omnipotence. We cannot enlarge these characteristics here, but only suggest how there is offered a unitary and coherent model of God. The Bible's name for this God is Yahweh.³⁴ In the divine tetragrammaton, YHWH, there is no positing of an abstract universal, an absentee God, or a process, but rejoicing in a proper name that signifies this Presence. Yahweh is the great "I am there," the continuing Presence who makes for love and freedom.

God makes God's presence known, yet also (to borrow a term from physics) this has to be "detected." Physics does not see the microparticles of its models, nor does theology see the God of its confessions. Both are inferred from the tracks they leave. To physics is assigned the causal tracking of the primitive object-processes in space-time. Theology tracks the richness of the divine Subject, who oversees the storied world history. Just as there are special phenomena to which physics turns for its revelations, there are crucial events to which theology turns expecting to detect the One who generates love and freedom. But these will not be manifest in the categories of physics; we can build no bubble chambers to register love and freedom. Such phenomena show up only at the higher organizational levels, primarily in events of the historical and personal life. They will involve transscientific categories, supersignals.

God Is There in Nature

Still, the earliest and ever-continuing dimension of the story is natural history. Nature is a sacrament of the divine presence, and remains so after the best descriptions of science have been received. Nothing known in science prevents the divine superintending of natural processes. To the contrary, whether we take the primordial big bang, microphysical processes and quantum states, or genetic sets and mutational potentials, science finds an open-ended nature that is a fitting field for the divine providence. Evolutionary developments and ecosystems have their intrinsic worth, but these have in global history been steered toward love and freedom, even though

science cannot conclude so of its own resources. Nature's richest program is in this sense a godly one, the production of persons who can love in freedom.

The enormous amounts of time and space involved are no hindrance to those who are introduced to relativity theory and its placing of time and distance in our reference frame, or who are unafraid of infinity. Other worlds, if such there are, might make us less anthropocentric, perhaps less Christocentric in traditional terms, but they need not make us less theistic. Natural selection processes, though sometimes awkward, are no final embarrassment when understood as a continuing creation in which every emerging level is intrinsically good, if also tributary to the construction of something higher. The secondary causes are haunted by God. Since we have from science no model that can even explain how, much less why, the leading movements of the dance of life have taken place, it is entirely reasonable, and provides a more catholic explanation, to protest in the name of a divine orchestration.

Yahweh is present in the recurrent orders of nature, at seedtime and harvest, but these are still-frame shots, cross sections in a dynamic moving picture. Seen at longer range, as we know from paleontology, these are spiraling cycles, evolutionary ecosystems. They are but subroutines, and the executive program is narrative story. We describe historically (though with theory-laden models) what the biblical writers could only describe mythically in Genesis 1-3. But even they tried to narrate a creation story as though it were a sequence of historical events, in the limited reference frame of a divine Architect and a six-day, ready-made creation.

The story is much richer and more complex. We can be glad for the history that evolution has introduced into what was before thought a special creation. One can expect that the Yahweh who loves freedom will put much spontaneity into the creatures, showing up as randomness and self-actualizing, if it is also true that randomness sometimes veils the superintending divine presence, true that sometimes self-actualizing can image God. "The Spirit of God was moving over the face of the waters. . . . God said, 'Let the waters bring forth swarms of living creatures. . . . Let the earth bring forth living creatures according to their kinds!' "³⁵ We now know more of the complex mixture of authority and autonomy in that brooding command that Earth "bring forth" automatically.

Some say that nature is just physics and its epiphenomena, nothing more. But for the theist, the matter is not so simple, because matter is not so simple. Other conceivable universes could have gotten nowhere, and the one we do have has certain astronomical, microphysical, anthropic constants that provide for exciting happenings. Our universe contains the right physics to allow it to become aware of itself in us. On the global Earth this did happen through the magic of biology, by natural events whose ever more informed upslope climb seems rather to elude the explanatory categories of biological science. The setup dictated by chemical theory is remarkably propitious to life. Water, "the strangest molecule in all chemistry," seems almost to have been selected for its role in nursing and supporting life, concludes the evolutionary biochemist George Wald, whom we earlier heard claim, "This universe breeds life inevitably."³⁶ The contingencies and natural selections of the planetary Earth remarkably pump up life, and release it into culture.

Some will say that any universe where observers come to worry about these

things will have to be of this kind. There can be no observers in other universes, where the physical and biological processes fail to produce them. But the fact remains that the only universe we know is of this miraculous kind. By the theistic account, this "observation" finds its best theoretical explanation as a sacrament of God. Those fortuitous physical constants undergirding and that transformative principle so constantly lurking over the biological contingencies are, seen again, the constancy of God. The whole earthen adventure is really a divine Advent.

It does not follow that nature provides a complete revelation of God, since love and freedom are only nascent there. For more impressive evidence we need to turn to more recent conclusions in our world drama, to the historical eventfulness of personal and cultural life. Indeed, only those who understand the complex fabric of love and freedom in the latter can rightly detect these threads running earlier through nature.

God Is There in History

We do not detect Yahweh by theoretical abstractions like those used to find the laws of gravity or relativity. The God with a proper name will be a God of story, where idiographic drama is as valued as is universal law. In Israel's struggle with God, it came to this creed early, and has since convinced much of the Western world. Yahweh is the covenanting God who effects an Exodus, a release into freedom, who holds forth a Promised Land, who struggles steadily to educate this people into righteous love, choosing them as a light to the nations. God is detected as the prophets "speak for" (*prophēteuō*) God, seeing the divine hand in the Conquest, in a land flowing with milk and honey, in a Davidic monarchy, in a post-Solomonic rebellion, in the Exile, the Return. In their history, the Israelites find a lure toward, a learning of, the divine Presence.³⁷

Likewise in the judgments of subsequent history, especially for those empowered by such a faith, God is making peoples free again in the American Revolution, or the Civil War, or the civil rights movement, or liberation theology. On scales larger and smaller there is exodus, judgment, conquest, exile, return. Whatever can be said about the economic and material forces that drive history, these are perennially overlaid with thrustings and reformings toward more freedom, justice, dignity, love, events of tragedy quite as often as of fortune. This model finds a certain law (*Torah*, "teaching") permeating all, and yet detects the divine Presence, concrete and dramatic, if also hidden, in the singular narratives of human events. History is His story. The world is God in story form.

One cannot detect the historical God full-scale in each local event, any more than one can detect natural selection in each individual life, or relativity on every clock. Advancement is not discernible in each new species of evolutionary mutation. But the statistical trends are there in the leading lines. The effects show up on broad enough scales. We will not be surprised if there are mutation points, revelatory crises, emergents, particular inaugurations of themes that gradually grow universal. Earth is selected from among the planets for the launching of life in the solar system; Africa is selected for the launching of humanity on Earth. Israel is selected for the

launching of monotheism in history.³⁸ More recently, the West is selected for the launching of science. Repeatedly yet surprisingly, there is (s)election for more story.

Sometimes the discoveries are transmitted by genes, sometimes by faith; sometimes the information spreads by interbreeding, sometimes by interbelieving. Nor does the story preclude crashes (the collapse of Israel and Judah, of Rome) that reset directions (like the great dyings at the ends of the Permian and Cretaceous periods). All history can be meaningful, as all life is sacred. But significant events (revelatory breakthroughs, prophecy, the Christ event) are not homogeneously dispersed in history, but (like breakthrough mutations in evolution) are rare and sometimes randomly scattered, sometimes featured in axial lines.

To be sure, the divine Presence can be enjoyed in nonhistorical activities, such as poetry or art, music and the mystic flight, in legend, myth, parable, proverb, in the contemplation of cyclic nature or the self-actualizing of a local ego. But these activities must be woven into and out of the meaningful flow of the historical process, into and out of cultural developments. The mystic vision is set in a cultural story (however novel to or redirective of it), just as the scientific theory is set in a cultural story (however novel to or redirective of it). None of these activities escape history, but they spiral around it as dated activities in the careers of historically situated persons, not as timeless disconnects from Earth's affairs.

Events are sometimes the visible consequences of empirical causes, more or less, but they are also the visible consequences of an invisible will toward narrative love and freedom. There is a sort of agency in the activity, an executive power that gives parts and wholes a creative upthrust and makes for life, diversity, culture, storied achievements. There are causes and precedents; ordered regularity is essential. But there is steadily more out of less: critical turnings, charismatic events, surprises, becoming and new being, information discovered, freedom learned, love enjoyed, peak experiences, and suffering through to something higher. The best explanation for these is that Yahweh is there in history.

God Is There in Jesus Christ

In Christian theism, Jesus is the living parable of God. Of all historical figures, he has the most aftereffect. Again we have a singular historical launching that turns the plot, this time a proper-named individual who casts his powerful shadow across subsequent centuries. Perfectly imaging God in human life, this divine Son loves in freedom, reconciling persons to God. To adapt metaphors from physics, through a kind of complementarity of the divine and human presences Jesus is locally present in Palestine, a particle there (as it were) and yet a manifestation of the Christ-Logos that is also a wave and ongoing presence over historical time, remanifest at subsequent probable and improbable locations within the lives of disciples after him.

Against those who say that suffering is too ugly ever to be godly, Christianity takes a supremely loving and free life and follows it to a hideous end, but to detect God's power in this sufferer who cannot be stopped. At the cross Christians are put in communion with this normative power for redemptive suffering. They are joined with this person who so dramatizes that he releases these divine energies at newly emergent levels, resulting this once only across world history in a pivotal resurrection

faith. What first seems a hellish anomaly defeating the claim that God is omnipresent, a scandalous story of a God-forsaken and crucified Galilean peasant, is thus retold as the primary evidence for the presence of God. The Creator is present, perfecting his creation through suffering. "For it was fitting that he, for whom and by whom all things exist, in bringing many sons to glory, should make the pioneer of their salvation perfect through suffering."³⁹ Jesus on the cross is God in pain. The primal energy that with the coming of DNA turned into information, energy that with the emergence of suffering turned into pain, now, at a crucial innovation in the plot, turns into righteousness with such passion that it ever thereafter makes history.

Jesus becomes an observational and experiential base against which any world theory is to be tested. He helps us understand the world, and our accounts of the world help us to understand him. An acceptable theory must be able to account for him historically and for this long-lingering impact on believers. Only partly and subsequently, then, do Christians have a theory that colors and prefixes what they can believe about Jesus. They first and dominantly have a historical personage, a datum, his world line, and ongoing Jesus experiences that trail his arrival. Jesus enters initially at the historical, observational, experiential level.

Afterward, any theory constructed about him, or the world that contains him, must be "up to" him. Never, for instance, did accounts of "accidental" or "epiphenomenal" events seem more hollow. Never did theories of "self-actualizing egos," of mind as a "cognitive processor," of "stimulus and response," or of religion as a "social projection" seem more facile. History flows through him, and any cosmic theory must provide a plausible account of a world, and the forces backing it, such as can generate this phenomenal Jesus. By such back-inference, the hypothesis of God offers the only adequate accounting for the emergence of Jesus in the world. God is Author and Actor in this passionate story.

The categories required for judgment here are transscientific. Science has no tools for the analysis of this idiomorphic Jesus, certainly not such sciences as physics or biology, and even psychology and the social sciences stutter before a figure of such historical moment. He perfectly loves in perfect freedom. He dies in witness to the power of suffering love. Such claims are neither scientific nor nonscientific; they are historically dramatic. Jesus is a commanding text to be interpreted. Even theology has but a faltering grasp on the *theologia crucis*, this logic of God on the cross. Much was going on at Calvary over the heads of those present, over the heads of interpreters then and now, over even the head crowned with thorns, the sacred head there wounded, with grief and shame weighed down. The story is of "Christ. . . having become a curse for us."⁴⁰ The trial he undergoes is not one of logic and illogic, not of biological or intellectual trial and error. His trial was conceived in tragedy, conducted in error by forces of evil grafted on to those of power.

Yet paradoxically that scaffold sways the future and he brings to focus a critical thrust in the world process. He is transfigured by his trial and cross into the suffering Messiah and risen Lord. There is a cross and a crown, and that a crown of thorns even when it is a crown of glory. Here is the survival of the fittest at an emergent level. He proves able to fit his disciples for living on, surviving in them, providing their survival. In earlier phases of organic evolution, organisms learned to pump out

disorder, repairing injured organs or DNA breakdowns. On the cross Jesus launches a new, spiritual pumping out of disorder, a redeeming from moral evils. We have no reason to think that science can unlock the meanings in this triumph of suffering love, or that it can disprove their presence in these enigmatic, epic events.

Suffering through to something higher is always messianic. Transfigured sorrow is ever the divine glory. That was never more true than at Calvary, but it has always been true ever since the capacity for sorrow emerged in the primeval evolutionary process. The creatures "were always carrying in the body the dying of Jesus"⁴¹ even before he came. J. B. S. Haldane found the marks of evolution to be "beauty," "tragedy" and "inexhaustible queerness."⁴² But beauty, tragedy, and unfathomable strangeness are equally the marks of the story of this Jesus of Nazareth. It is a fantastic story, but then again, to recall the conclusion of a puzzled astronomer, Fred Hoyle, the universe itself is a fantastic story.⁴³

To adapt the military metaphor of the paleontologist D. V. Ager (recalling how common conflict models are in theology), Jesus' career is a short period of eventful, strategic terror,⁴⁴ subsequent to (relatively at least) long periods of waiting, preparation, boredom in those who preceded him. In a better model still, he was "anointed," christened of God to struggle (as did Israel also "struggle") toward realization of the Divine Presence. There is in him a great and divine "yes" hidden beneath the apparent, harsh "no" of the world. But that is revelatory of the whole story, though it takes at a pitch the elsewhere gradual struggle upslope. God is standing in the shadows, the dim unknown.

Others will find this commitment to a historical individual archaic, but for the Christian this is *archaic* in a foundational sense, an archetype revealing the continuing plot. The selection of the singular Christ, anointed to bear sacred information, is thereafter reproduced and unfolded in the hosts who become his disciples. We continue "bearing on our bodies the *stigmata* of Jesus."⁴⁵ Thus, the Eucharist is done "for my recalling." The Last Supper takes the disciple back into those storied events so pivotal in Earth's history; it brings the story forward, empowering the faithful, on the telling edge of the present becoming future, to carry on the story in the Lord's presence.

In him we have the breakthrough of the divine Logos, the light coming into the world where it already was, yet explicitly in intense, pointed fullness, a light destined to shine in maturing brilliance over peoples in centuries to follow. A difference between dramatic history and scientific law lies in how the latter is repeatable and ever available for fresh access at each cross section of time, while the former finds directional currents taken of old. To these bearings one returns for orientation in current events, however much we also reach decision points and undergo conversion to new directions. The question "Who was he?" becomes the question "Who am I?" And vice versa.

God Is There in the Personal Life

Yahweh is the giver of meaning in each believer's life, where God's presence in history and in Jesus Christ is interiorized. Thus, the transscientific theist affirms all that the existentialist theist affirms about the presence of God as Spirit to spirit. He agrees with the process theist that love and freedom cannot be coerced but must

be responsibly educated as the disciple is persuaded by these divine goals. Here there is demanded a far richer notion of causation than any known in natural science, a richer texture of meaning than any reached in the human sciences. We need the category of the presence of *grace*. The Prime Mover is the Prime Meaner, who graces life.

Under the prompting of this Spirit, one can decide, for instance, to reform a decaying marriage, or to forgive a brother, or to suffer for a friend, and one can believe in and receive divine grace in maintaining this decision. Science sometimes sideswipes such claims, especially in abnormal situations, revealing, perhaps—what theology already knows—that humans are prisoners of their ignorances, less rational, less autonomous, more flawed than they suppose themselves to be. At the same time, where there is genuine redemption in the personal life, as often there undoubtedly is, nothing known in science gainsays the claim that divine grace is superintending those psychological and social relationships that the human sciences can only partially study.

Or, again, in the claim that we are being crucified with him, like him, into newness of life, we confront a transscientific judgment about grace through tragedy. When we enter the realm of the universal Thou who draws particular thous into love and responsible freedom, a freedom able to respond to such grace, science fails in analytical power. But such religious encounter and power is dramatically there, and this demands explanation for the meaningfulness it supplies to the story.

"The Word became flesh and dwelt among us, full of grace and truth. . . . And from his fullness have we all received, grace upon grace."⁴⁶ That *Logos* is amply with its *logic*, rationality; but *Logos* means "word," speech, storytelling, and the Prologue to John, from which these words come, is the prologue to a gospel narrative. The narrative form of the passage of God through history is the *Logos* who dwells in the flesh of the world. That has taken place historically, eminently but not exclusively in Jesus, and it continues to take place in the storied personalities we enjoy. The logic is not that of an architect and his design, or a scientist and her theory, but a narration of the conflict of good and evil, of divine grace redeeming the story. Each of us is called to our roles in that struggle, and offered divine presence in acting our parts. This one God—the *Father* transcending nature, superintending history, the historically incarnate *Son*, and the immanent *Spirit*—this is, in Christian symbolism, the triune God, not three gods that add up to one ($1 + 1 + 1 = 3/1$), but one God to the third power ($1^3 = 1$), known as a unity in these multiplications of the divine presence.

God Is Freely, Effectively, Intelligibly There

Each adverb here is important, because each is keyed to a divine attribute, to freedom, power, and wisdom, as God is *objectively* present in the world. Each fits the open-ended nature that science now describes and the historical eventfulness we experience. With the crumbling of mechanistic, deterministic models of nature, there is room for the divine hand to be *freely* present—within superposed quantum states or random genetic mutations, or brain synapses, or in the unconscious mind, or luring human decisions, or launching conceptual innovations. If indeed this is divine freedom, we will not expect to capture its presence scientifically. The energies

of nature, upon which is modulated all history, veil the divine power. Above all else, the world drama calls for enough imperative power, a call that has only been intensified by the history described in evolutionary science. But science nowhere supplies nature with enough power, with a principle able *effectively* to call the world into being, one able to command these causal processes to supply meaningfulness. Nature repeatedly has the kind of underlying order that monotheism might expect, despite the frequent surprises. Even these surprises are partially handled by recalling the divine freedom and by supposing that God enjoys freedoms in the creatures, that God permits spontaneous novelties and insists that organisms pursue their own ends as they adventurously track through an open-ended nature. Perhaps God enjoys this "inexhaustible queerness." Yet the intelligibility found in nature is not self-contained. Nature nowhere supplies a rationale for its own orderliness, but only presents this as a given. This "given" leaves ample room, and sometimes seems to beg, for one who is *intelligibly* there.

God Is There in Righteous Love

God is most nobly revealed in freedom, power, and wisdom as these come to focus in righteous love. God is *subjectively* present in intersubjective human life. Righteous love, an emergent category, is not present across vast reaches of physical nature, not present in earthen biology; but we are not to conclude its unimportance from its rarity. Rather, it is the most startling fruit of the natural-historical process. The forces of causal attraction with which physics begins are supremely transformed when, in end result, one person is attracted to another in holy agape. Before this phenomenal (but not epiphenomenal) effect, science is speechless. But theology finds this the clearest of the tracks of God, seen pivotally in Jesus, where his royal freedom is his holy love. Through him, this regenerating life force is loosed across history, with intensity enough to keep his normative life present in his disciples. We can conceive of no higher form of God's presence. Those who detect meaning at this level are prepared to predict that nothing will replace it. Sooner or later, others will be drawn to its lure. There may be limited truths in interpreting the world as an oscillating *yang* and *yin*, or a void Emptiness, or a motionless Plenum, or an illusory *māyā*. But righteous love is the key to the drama, and not only to Judeo-Christian portions of it. The other theories must be tested and healed by this interpretive pattern. Scientists hardly dare to predict what biochemistries living beings on other planets might have, or what neurophysiologies might sponsor their consciousness. But a Jewish or Christian theologian will prejudge that if they do not yet know righteous love, they do not know the final truth about the lofty potential of nature. This emergent conception that Judeo-Christian history has attained is a signal of the Kingdom of God.

God Is Always There

"The eternal God is your dwelling place, and underneath are the everlasting arms."⁴⁷ As Augustine said of God, nature is the medium in which we live, move, and have our being. But there is a passage from this natural womb to the omnipresence of God, a path permitted to faith. Nature, history, and persons are all "in God."

The study of physical nature has given us an introductory model for how this might be so, although only the spiritual life can incline us to believe this claim. Simple physical events, particles, are wave flows, warps in space-time, indentations in a pervasive plasma-ether. To recall a crude analogy from Chapter 2, they are like traveling dents in a partially inflated basketball. Complex physical events are compoundings of these, so that nature, history, and persons are, so to speak, enfoldings or implications in the plasma. These achieve their own integrities and enjoy emergent levels of spontaneity and downward causation, even while they well up from depths below.

The upper, later-coming reaches of the historical drama prompt us to think further of this great plasma in which all is conceived, and we can recognize it as a spiritual as well as a physical plasma. Everything crinkles the level below it, organisms over matter, mind over organisms, Spirit over persons, yet everything is a wrinkle in God, who is alike above and below. "Thou dost beset me behind and before."⁴⁸ We want a Presence in the plasma that makes for love and freedom. Rare though these outcomes may be, they are nevertheless highly revelatory. Physical aggregations are comparatively infrequent—for example, stars in interstellar space. Life is found but once, so far as we yet know, and is rare in any case, with human (or self-conscious) life rarer still. Righteous love is more exceptional still. Yet each emergent level increasingly shows what nature can do, progressively to reveal the Presence behind and before, below and above it.

The presence of suffering defeats this account only if over time it prevents the development and display of righteous love. The theist finds that it has not. To the contrary, we "learn through suffering."⁴⁹ Suffering is the logical and empirical obverse of caring, with caring the necessary precedent for righteous love. God is especially there in the power to suffer through and to gain love in freedom. Some caring for these highest values must run deepest in the nature of things, else we cannot explain the results we see manifestly delivered in ourselves, a historical and existential fact with which we have to reckon, and, more than this, ideals beyond the real that govern the shape of what *is* with what *ought to be*.

We are not here dealing with proofs for God. Proofs are unavailable in any hard sense, even in science. The movement from observation to theory is always a weak, backtracking one. If T, then O. If this theory is true, then what we observe follows in course. God is a "Cause" adequate to these effects. God brings complex nature out of simple nature, informs nature, informs culture, elects Israel to its history, sends Jesus with his impact, redeems the personal life by a constant power for suffering through. Such beliefs come by no linear proof; they detect a divine gestalt inlaid on the whole, a story that needs an Author. Transscientific theists will in candor admit that this finding is not as evident as they wish, but we are dealing with God and can expect only a glimpsing of the divine. The kind of *confirmation* to be looked for is not that of the *laboratory* but that of the altar, where believers are convinced of a Presence because they are conforming to the divine love in freedom.

Counterevidence to the Gracious Presence

Transscientific theism is impressive in its capacity to soar over nature and history, in its power to buoy up the personal life, but it also touches ground concretely to

find many anomalies and misfits in nature and history. Its toughest challenges lie in biology and anthropology, and with the presence of suffering.

Perfect grace, mercy, patience, holiness, righteousness, and wisdom are certainly not the routine estimates one makes of the forces of *nature*, for instance, when touring a natural history museum depicting the age-long struggle of life. The relativity of time notwithstanding, it is hard to see why God spent so long with the trilobites. Perhaps what God is doing (since God has ample time!) is allowing, if also luring, the self-assembly of life. The self-assembling of the lower levels takes longer than the self-assembling of the higher levels, the development of complexity accelerating by a logarithmic rather than a linear scale. Still, why did God create the tapeworm, once give it eyes and legs, and then take them away and make it parasitic, the source of pain to its host, which it debilitates but (unless it is ill-adapted) does not kill?

Some projects in nature do look like "tinkering".⁵⁰ While we may not need a Perfect Craftsman-Architect, neither can we posit a Perfect Tinkerer God, even if this is a tinkering toward love and freedom. There does seem to be some broad-scale superintending, to be sure, which accounts for the long-range successes in construction, but of a remote and loose sort.

Local events are by no means optimal solutions; they are makeshift compromises, often tortuously twisting species into the ever-deepening ruts of overspecialization en route to extinction. The trials and errors by which all earthly creatures, ourselves included, develop and learn may also be true with God, but this ill fits *perfect* wisdom, power, and glory. Nor can these features of nature entirely be accounted for by a *perfect* God's insisting on spontaneity and self-actualizing in the creatures. Before Darwin, it was easier to believe of God that "ever since the creation of the world his invisible nature, namely his eternal power and deity, has been clearly perceived in the things that have been made."⁵¹ There is still some truth in this, but the connections between God and biological nature are weaker than transscientific theism supposes. This is what process theism and scientific-existentialist theism have tried to admit.

Perfect grace, mercy, patience, holiness, righteousness, and wisdom are certainly not the routine estimates one makes of the forces of *culture* when touring an anthropological museum. Before its hopeless array of forgotten cultures, as wasted as the potsherds that are used to date them, it is hard to see why God, who selected the Israelites and sent the Christ, did not enlighten the nations sooner. Did he not care for the Neanderthals? This is not to say that Neanderthal lives were meaningless or without point, but there really is not much sense to all the non-Jewish and pre-Christian stories so far as they contain any relationships to the perfect monotheistic God. Whatever meaningfulness they managed to achieve, they too seem like "tinkering" at this point.

Of course, a biblical theist may say that God "did not leave himself without witness" to the gentile generations,⁵² and that "what can be known about God is plain to them because God has shown it to them." But by the Bible's own admission this witness was largely "futile,"⁵³ futile, we now add, over several million years. This sits ill with the *perfectly merciful* God, no matter how much allowance is made for human sinfulness. God's creation is so broad-scale, the cultures are so abundant,

God's redemption is so local, late, and particular. Transscientific theism does not fully endorse the models of nature and culture that arise in the other, nontheistic, nonscientific cultures (and rightly so). The others cannot supply their own fully convincing models. But neither does Judeo-Christian theism supply one that links many of their affairs very closely to the presence of Yahweh. The Hebrews brought monotheism, but there were other storied developments elsewhere (the wheel, writing, the bow and arrow, the use of iron), which also had their worth. There was something godly in all those cultures. But there was no monotheism, Yahweh's presence was anonymous, and in this respect, if not also in others, they were "wandering in the wilderness."

Their religious life has no duration, but is mostly to be repudiated in the monotheism to which they are converted. Religiously speaking, theirs was a history of error and superstition. (Perhaps we should notice that other prominent world faiths find religious beliefs throughout history to be mostly mistaken: the Hindu *avidyā*, ignorance; the Buddhist *śūnya*, emptiness of all creeds; the Islamic *Jā-hiliyyah*, days of ignorance). Of course, science too says those were ignorant, superstitious eras, and even more emphatically. Real truth has come only with our conversion from myth to science.

Meanwhile, it is hard to interpret all those years and cultures as experience with the *perfectly gracious* God, much as it is hard to interpret them as scientific years. Have their stories all that much coherence? They often seem like muddling through. Is there all that much evident grace available to common, not to say vulgar, human life? The upshot is that God must be loosely coupled to history. This does not mean that a divine influence is entirely to be eliminated, only that it is weak and indirect, as scientific-existentialist theism and process theism have tried to admit.

If we add to this the presence of suffering in both nature and culture, and try to feel its full weight, we further confirm a loose coupling of God to observed world affairs. Account for suffering though we may as necessary to the divine providence, we still have more of it than one would predict from the theory of a God who is perfectly gracious, merciful, patient, holy, just, loving, and wise. We were obviously pressed to make the cases of the pelican chick and the anemic African child conform to the monotheistic presence in wisdom and love. Too much seems brutal.

It seems rather that the divine presence has to struggle with suffering in some way that requires us to limit, to "soften" the divine perfections. Can the Holocaust in our own century be interpreted as the result of the providential activity of one who perfectly loves in perfect freedom? In any case, we must not portray nature as better than it is, or history as more meaningful than it is, to satisfy a religious doctrine. While certain broad lines of salient evidence are undeniably there, there is also more static in the background, more meaningless noise in the picture, than the classical picture of God can readily handle. In transscientific theism the dogma can grow too thick, the paradigm too hard-core to attend to the detail in the story, to the counterpoint and counterevidence.

Before this kind of evidence, transscientific theism becomes less confident. In the postscientific era, we can no longer make any sense thinking of a first creation and of a later fall, but perhaps there is always creating and always falling, upstrokes and collapses, goods and evils, with a steady suffering through. God loves in freedom,

yet still the creatures wander. God provides, permissively. Alike in nature and human affairs, God creates by tolerating mistakes and slowly reconciling them over time, moving through the pains of growth, but not taking mistakes and pain away. God forms good out of evil long before moral agents arrive. To the notion of trial-and-error learning on the part of the creature we can add the notion of God patiently reconciling the mistakes of the Creator's sometimes clumsy children. Just as God lets humans do autonomous and foolish things, so God lets the creatures follow their queer paths. Perhaps God even enjoys this wildness. Perhaps we need a soft theism, to match a soft naturalism, giving up hard theism as well as hard naturalism.

Perhaps theism, in the arena of meaning, has to do what science had to do in the arena of causes—to give up an absolute requirement for meaning in each event (the perfectly present God) and to hold only statistical claims, admitting scattered areas of meaninglessness in the way that science admits scattered randomness. If in the games we humans create for ourselves we mix order, skill, surprise, chance, and find those games of most delight that interestingly balance these components, perhaps God the Father Almighty also enjoys mixtures of order, skill, surprise, and chance in the games of creation.

On the whole, meaningfulness can be gathered out of the processes of nature and history, although some episodes can be meaningless. We have a statistically present God, which does weaken the sense of the divine presence, but this can also be allocated partially to divine preference for freedom in the creatures, letting them do their own thing, fumbling though this may be. It is partially to be allocated to factors that we frankly do not now understand. Too much is going on over our heads.

Perhaps the most we can conclude from these theistic options is that theology is a multiple-paradigm science, where each theory has something to commend it, each fits some of the data of experience, but each has its unsatisfactory areas, partly in accounting for world events more or less anomalous to the paradigm, partly in getting clear on its internal logic. These theories to some extent feed off each other's weaknesses. Still, all of them have considerable plausibility and explanatory power. Whether or not we conclude that God is a process, we can at least conclude that theology is. And we can commend it, with no less embarrassment than with any of the sciences, as a noble attempt to make sense of nature and history.

We humans are creatures of a few dimensions trying to map a universe that has hundreds of dimensions; we are finite beings trying to map a universe that is infinite. We may need multiple and complementary models of God and of God's action in the world. We do not yet have a single, unified model of the electron wave cloud, or of evolutionary development, the psychology of the ego, society, or the sciences, much less of God. There is no particular reason to expect, now or ever, that a single, unitary account will handle all the divine mysteries. This need not make us agnostic, but it can caution us not to worry overmuch if our theologies are multidimensional, approximate, conflicting, and unsettled. Even our failures, instabilities, and insecurities can be a form of providence.

There may not be any straight lines from nature or history to God; there may not be any simple deductions from models of God to nature and history. For straight lines and simple deductions do not take risky adventures, make good stories, require much faith or logic to detect the plots. Any study of nature and history leaves one

suspicious of monistic interpretations in a pluralistic world, however much one is still drawn to seek unity in the saga. With both good induction and good narrative explanation, the route to God will exemplify, not be exempt from, the sorts of travel we have previously known.

5. INSIGHT IN SCIENCE AND RELIGION: DOING THE TRUTH

Judgment in these matters often exceeds our capacities. Our creeds, like our sciences, are ever reforming. Yet we can draw some interim, minimal conclusions about what produces insights in science and religion, as these two great disciplines enable us to judge whether nature and history point to God. Our closing theme ties back to the question of Chapter 1 about methods in inquiry, enlarged as this has become by the attitudes we have taken up toward the sciences, nature, history, and theology in the succeeding chapters. Judgments about the content of a creed require a character of insight keyed to the character of the believer. We reach self-implicating judgments *par excellence*, a high pitch toward which we have steadily been rising.

Such judgments involve serious, objective claims about nature and God, but they are claims made by incarnate subjects who are, as it were, sandwiched in between nature and God. Humans find themselves on the battle lines of natural history, at the apex of the ecological pyramid and evolutionary process, so far as we know it, and charged with emergent qualities that portend the supernatural. Humans live at the intense junction of the natural and the spiritual, and their decisions rest on actions in their embodied lives. Answers lie hidden within ourselves. We do not discover these by ignoring where we are situated in the natural and cultural processes (a mistake religions have often made), but we discover them within ourselves as having leading roles in an evolutionary, historical, participatory Universe.

Correspondent Truthfulness

We can judge the worth of this drama only by experiencing our radical calling in it. Some crucial results of it all are currently underway within us. We are elected to *wrestle* with the question of the presence of God, to be "Israelites" in that etymological sense. We argue with our lives as well as with our heads. We take up the cross, follow the Suffering Messiah, learn who he is as we labor heavy-laden on his way. We are "christened," anointed to incarnate God's Spirit in the world. Truth based on experience is not something insisted upon in science and neglected in religion. To the contrary, this is more intensely demanded in religion as a critical science. We step up from experimental and empirical to experiential levels.

It need not follow that every failure to render decision here (for instance, between the denominations of theism just surveyed) is rooted in some morally faulty experience of the judge, since persons of good will disagree, and disputants must often rest content with unsettled views. Experience may be incomplete because of our juvenile knowledge, though we are not at fault because of this. The question of

how closely coupled God was to the primeval evolution of life rests in part upon biological descriptions, upon facts (though theory-laden facts) that can be provided by scientists independent of the presence or absence of religious experience in their own lives.

But the question also rests upon judgments about appropriate levels for the divine permissiveness of spontaneity in the creatures, judgments of what is good and evil, of what is ungodly, queer, cruel; and these do rest upon religious sensitivities, even though sensitive persons can disagree about these. This is true also with judgments affected by psychology, anthropology, sociology, physics, and chemistry—for instance, in judgments about the quality of life in hunter-gatherer cultures, or the overriding of the individual by social forces, or the extravagance of the astronomically large universe.

As these issues integrate into longer-range judgments about the local stories in their larger contributions to the Earth story, we certainly need facts of the theory-laden sort that science can supply. We certainly need historical data, and we need them unbiased by religious experience in the individual or by dogma in the tradition. But we cannot begin to find meaningful patterns in the facts, to weigh the facts "for what they are worth" to "see them as" this way—suffering through to something higher—and not that way—an unfair, absurd universe—without empathy, without sympathy, that is, without a "pathos" in the interpreter who is sensitive to this, rather than that, mode of interpretation.

There are heavy participatory demands on all those qualified to judge at the story levels, requisites always necessary, though sometimes not sufficient, for competent decisions. Thus judgments about *nature*, as these can be made by scientists, are not of the same caliber as judgments about nature as a sacrament of *God*, made by theologians, owing to the way these latter judgments pass meaningfully through the life of the actor-judge. Much of the efficacy and content of belief in God arises from impacts within one's life course, personally and culturally. We see with what we have become, with the brains and sense organs we have evolved, but also with the persons we have become by tradition, experience, decision, and faith. Perhaps we cannot give a prescription for right judgments, but we can be sure that no one avoids wrong ones who stands off from obedience to truth.

Life is a pathway on which there can be no knowing without going. Even at biological levels, more informed genetic sets were formed in contexts of survival. Within psychology, learning is a product conditioned through trial responses to stimuli. The self matures by deciding for and defending a dynamic value system as it moves through the world. Across history, cultures evolve in challenge and response, where new truth has to be struggled for. This knowing-with-going is supremely true in religion. The casual, cool observer sees nothing conclusive about the meaningful plot, for he is inadequately sensitized to the realities that are expected to be observed. Even within science, truth comes to those who with zeal hunt for it, those who frame theories to catch the right data. Within religion, truth comes to those who in passion sacrifice for it, who compose lives to hear the Spirit-wind of God. Knowing requires an adventure in love and freedom. The truth lies on the way of the cross. The Logos story must once more become flesh.

Decisions about who and where we are depend on the sensitizing capacity of the

roles we choose. Religious judgment is not uninterested in the causal connections found by the sciences, being often affected by them. But religious judgment is essentially the search for meaning. When such truth comes nearest home, judgments about good and evil in nature and history interlock with good and evil as decided for and against in the life of the judge. The presence of the Spirit of God is another of the *interaction* phenomena, exceeding those that take place when an organism achieves its identity by calling forth a life course from among the quantum states, or a self determines its character by modulating neural circuits, or a living cultural tradition superintends and educates organic, personal human nature. Lower-level phenomena have been gathered under higher-level superintending repeatedly before, and so again.

The Spirit of God enters life "from above" as a yet higher-interaction phenomenon, when the person is taken up, called to the divine destiny. God comes near as we elect a way through the superposed life states that confront us. God supplies those superposed life states, but becomes present in life, whether more or less, depending upon our interaction patterns. The life of sacrificial love lets more of God in, and confirms that Presence; the believer is thereby helped to see more of God in kindred phenomena around her in history, or to see more worth in the tragic struggle that so offends others. Alternatively, the life of selfishness and hatred, or the life of skepticism, indifference, and indecision, closes God out more and more, and blinds the nonbeliever to the presence of God near and far in the programs of history. God's Spirit interacts with human spirits, as human spirits interact with the world and each other. To know the presence of God one must embody that presence in one's own life. Our personal experiences are, nearest at hand, that *at* which we look, but they also become lenses *through* which we look at everything else.

To put the point boldly, one must live on the cutting edge of spirituality to make sense of what lies behind and around, because only at this focus can we form within the gestalt that decodes the drama. This happens appropriately (if also approximately) by appropriating the world course into one's own career, by living appropriately within the world. One will not, at the end, settle into conclusions simply by watching the world lines of mesons, the readout of DNA, the demise of a pelican chick, or that of an anemic African child. One will not decide by noticing what stimuli condition what response, or by sifting through how values function in others' lives, or how values guide a culture. The Freudian question of whether the divine father is an illusory belief is not concluded by scientifically analyzing the role of religion in a patient's life.

Rather, only by hungering and thirsting after righteousness in the Father's Kingdom can one here be satisfied. The ethics incorporated into one's story attunes one to the worth of the story, and here the brass laboratory instrument, the meter reading, the streaks on a photographic plate, or even the social science questionnaire tells us nothing of real interest. Rather, by one's own suffering, dying, and rising to newness of life are judgments of the worth of religion made. Explanation, evaluation, and existence are three in one. On this point existentialist theism has been most insistent.

The story, which for long epochs moved without us, and which the sciences can help relate, now moves through us. Though it earlier moved through us over our

heads, and indeed still does so, we have recently come to fuller awareness how its headings lie in our human decisions, made on the frontiers on which we now stand. The world is still being made. Truth, which can sometimes be said in science and even in religion to constitute a reflection of nature, now comes to mean imaging God, reflecting over and becoming the noble consequence of the natural history, divine drama that this is. Truth lies in the creation of what *ought to be*, beyond what *is*, seen in visions that prescribe the conclusions for our descriptions of what, to this point, has been going on. A certain sort of being-in-the-world is required for knowing the world, since it is in ourselves that the story is taking place. We are coagulating the possibilities this way and not that way. We are writing the text.

There is, therefore, a limit to the correspondence theory of truth, a theory that some will say has been too much presumed throughout this book. Or, better, there is an active deepening of it, beyond the passive sense in which "correspondence" is usually taken. The mind does not merely mirror the world; the person moves through and evaluates the world. Truth must be functional and pragmatic, and thus our sciences, not less than our religions, are ways of getting things done. But neither do we want to reinterpret truth merely as a matter of what is useful for human purposes, of knowing nature as an instrumental resource for human self-actualizing.

The moment of truth is the moment of decision. How can humans play useful roles in the unfolding story? We want a *correspondent truthfulness*, where the actor is true to, corresponds to, becomes a faithful participant in, the drama he inherits from nature, history, and God. The *facts* call for *acts*. The *actors* form *characters*. The *is* demands an *ought* in the ontological and chronological sequence, although the *act* and the vision of *ought* are required, in the epistemic sequence, to know what is going on in the historical sequence. That is an operational view of truth in the richest possible sense. One needs a critic, one able to judge, but not a spectator critic; rather, a dramatic critic able to judge how she can make a nobler play. We do not have, or wish, the objectivity of the ideal observer, of the perfect, disembodied reason; nor, on the other hand, do we have or wish the subjectivity of the arbitrary existentialist, a self choosing whatever it wishes. Rather, we face the responsibility of the participant in the story in which she is elected, and elects, to take a meaningful part. What we learn from the Greeks is that the unexamined life is not worth living, but what we learn from the Hebrews is that the uncommitted life is not worth examining.

The Transformation of Science into Interpretive History

We can return to and modify a schematic methodology with which we began (Figure 7.4).⁵⁴ Progressively reforming and developing theories (T_1 , T_2) are erected over observations. From these, further observations are deduced (O_1 , O_2), observations that are also theory-laden facts (T-facts). This leads at a larger scale to progressively reforming and developing interpretive narrative models (I_1 , I_2) erected over historical sequences (H_1 , H_2). Thus, science is subsumed into story. The quest for causes passes over to the quest for meanings. The interpretive narrative hopes to *match* but also to *make* history, to reflect and to reform the storied sequence. We have meaning-laden history. The "deductions" (if T, then O; if I, then H) become

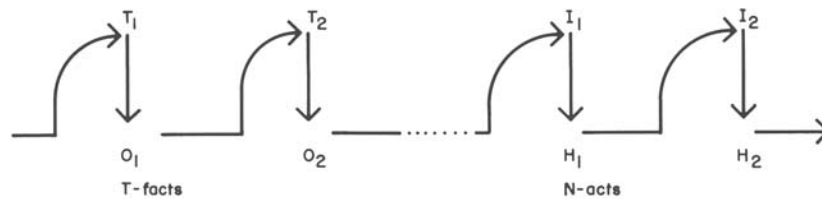


Figure 7.4 The transformation of science into interpretive history

life-orienting, life-implicating. They are experiential beyond empirical. A historian who *per impossibile* merely recorded everything accurately, like a motion picture camera, would see everything and understand nothing. Only by framing narrative interpretations, in which one assumes a role oneself, does one begin to understand. In that sense, it takes a vision to have vision, really to see what one sees.

Confirmation is doing the truth. "Drawing conclusions" is acting out the consequence of the story. "Deduction" still includes thinking critically from interpretation to history, checking history against interpretation; but it further includes a being "led out" from interpretive creed to responsible action, so that the historical sequences (H_1 , H_2) are narrative-acts (*N-acts*) as well as theory-laden facts (*T-facts*). One checks this theory by joining the story, trying to image God to decide whether there is a divine Author. We not only *have* a paradigm, we need ourselves to *be* the paradigm, the disciplinary matrix, the disciple who incarnates the truth. This rationality is not something abstracted from life, timeless and eternal, tested against experience and nature though rationality must be. Rationality is whatever it has developed to be at this point in our historical careers. The logic is not merely *inductive*, nor *deductive*; it is *productive*, as we weave a way through the superposed potential historical states.

Information and Reformation: Science, Values, and Truth

The story is ever reforming, but this now includes more than a revising of theories. Religious *information* comes with *reformation*. Whatever one makes of the details of the various concepts of sin and error, universally present in the world faiths, this much remains in outline: some off-centering of the self in favor of other-directedness cleanses the self for truth. Even in science, we found it desirable to recommend universal intent, past one's own stake in any professional research. In religion there is required a dying to self (not a dying of the self) and a regenerated life in the corporate realm of God. Precisely this rectifies the subjectivity that may have threatened to introduce error in the intense demand for existential participation. Each subject is rededicated in his world ecology and his historical community. Like the divine Son, the self is martyred in behalf of the world. There is what Buddhists call the great renunciation. These are moments of truth. Revelations come when one no longer takes a commanding interest in one's own sector but in the whole. The visions we have depend upon the revisions of life we choose. In that sense, judgments about what *ought to be* feed back into our estimates of what *is*. Judgments become matters of conscience. But conscience, though self-implicating,

does not permit one to do what pleases the self. To the contrary, conscience calls the self to duty, to transcending honesties and integrities, to charities, and therefore is self-involving so as to be self-denying. There is a norm beyond the self, a distance created between the self and what is right, just, true. This reformation of the self in the light of the larger story increases perceptive sensitivity.

Biological organisms have a kind of information (in genes and instincts) that defends only their own form of life, although this self-defense can be of value to others secondarily, perhaps as integrated into ecological webs, perhaps by providence or serendipity. We do not need to be taught to defend the self; that comes naturally. But through spiritual reformation persons can gain a kind of information that seeks and sees more holistic, less self-sectored truth. The self is emplaced in its total environment, is prepared to live and die following its role, defending its intrinsic values, and yet not apart from, but an instrumental part in, the whole. Our anthropocentrism is not "hard" but "soft" in the ecological and evolutionary story. The particulate self is a wave in the dynamic flow.

We reach what some psychologists recognize as penultimate and ultimate stages in the religious life. Against Durkheim, religion is not just a veiled concern about one's society or culture; it is a quest for ultimate understanding. One learns to love neighbors, more and more, other persons, other creatures, and in this one finds communion with God. One detects the Kingdom of Heaven at hand on Earth. There is a call to discipleship, to performative truth. Jesus accordingly says, "Whoever has the will to do the will of God shall know whether my teaching comes from him." "He who does what is true comes to the light." "If you continue in my word, you are truly my disciples, and you will know the truth, and the truth will make you free."⁵⁵ This logic must be lived as personal knowledge, making and keeping us loving and free. This word is found to be divine as it becomes incarnate.

When Jesus says that the "pure in heart... shall see God,"⁵⁶ he does not mean to disparage or replace clearheaded religious inquiry. God is to be loved "with all your mind."⁵⁷ But he cautions rather that only as the heart becomes pure can the head get any dependable clarity about ultimacy. Nor does this beatitude guarantee increasing answers in proportion to purity alone, and oblivious to logical rigor. Jesus does, however, direct us where and how to look for the divine disclosure, a direction that remains true despite what analytical capacities we may gain in science.

We may use this beatitude, first in a backward look, to preserve in part the integrity of prescientific religious inquiry, and, second, in a present and forward look, to worry about an ominous clouding within scientific inquiry. All the classical world faiths were founded by seers and saviors who were ignorant of most of what has been discussed in this book—celestial mechanics, relativity, quantum physics, molecular biology or evolutionary theory, behaviorism, psychoanalysis, humanistic psychology, social functioning, and often world history. They knew little of life's origins, little of external nature, and they were culturally provincial. It might seem that their truths must be archaic, and this is indeed often so. They did not have the right categories for reliably interpreting nature, and we must largely discard them here.

But in the areas of moral awareness and of ultimate issues in human experience, they were often on the cutting edge, and we may profitably test and often trust them here. Sometimes these seminal figures had passionate callings that empowered them

to detect God's activity in their local world events, sometimes confusedly and under other names, sometimes with vision enough to see what meanings were normative for the whole. One needs no science to experience the categorical worth of justice or of suffering love, just as (what the two-language theory rightly insisted) one needs no biochemistry to know that one is waving to a friend. Such inquiries into life's meaning, couched in the mythologies of former days, may survive translation into a later, scientific world view.

Further, when science comes, it may not always be accompanied by purity of heart. Science can suppress what the saints had earlier known, and it can deliver error, or fail to deliver any ultimate truth, because of its naïveté about the loves and choices of the heart. Science may bring no better acting in the story; rather, it may yield less meaningful participation in the narrative of events, even bring failure, anomie, and tragedy. She who is doing science has yet to ask whether she is doing the truth, whether she is loving in responsible freedom.

Science is willy-nilly a value carrier. It may be value-free in itself, but science exists in persons, in societies, as surely as does religion. We use it to play our roles in the story. It is the product of actors traveling through their world. Science is always conducted in a value ambience. Pure science is always shadowed over by some social form of life. The owning of knowledge and power, especially as amplified in recent science, is a responsible process. *In vitro* science may be neutral; *in vivo* science is generated in the chasing and clashing of values. We must not let the laboratory analysis of a thing deceive us about what it is in the field from which it is inseparable.

Sociologists need to do with science what they sometimes think to do only with religion—tease out the latent behind the manifest functions. We must sometimes understand science in terms drawn from outside itself, just as sometimes science needs to understand religion in terms drawn from outside religion. Science too has a derivative status as social product. The good scientist has to ask not merely about effective inquiry, but about the effect of inquiry, and what inquiry itself is the effect of. Science lies *in situ*, quite as much as does religion. Neither is a noncultural discipline, despite the impressive universal and transcultural elements in both. Pure and applied science are part of a people's narrative story. Science is not only theory-laden but culture-laden.

This means that science serves cultural and individual perspectives in ways that can be self-serving, self-willed, materialistic, prejudiced, compulsive, and destructive. Where science seeks to dominate, manipulate, and control nature or persons, never asking about respect, submission, obedience, or righteousness, it operates in persons impure of heart, and blinds quite as much as it illuminates. Science can create the illusion that humans are alone, free to fulfill their desires. It can rationalize the belief that only humans count, with nonhuman nature valueless. It can destroy gods and replace them with wave clouds and randomness. It can seemingly justify and make inevitable or innate our selfishness.

We need not be surprised when a scientific culture leaves its citizens with their material needs better provided for, but lost in meaninglessness and alienation, divisiveness and angst. Indeed, these features have characterized scientific societies on a scale never previously known. Humans are increasingly competent and decreas-

ingly confident in a sterile world. The fruits of unguided science are bittersweet, leaving us less sure than ever that the theoretical implications or the practical results of the next discoveries in physics, biology, or psychology, or social science will be beneficial, or even benign. Nothing in science ensures against philosophical confusions, against rationalizing, against mistaking evil for good. Science is a good servant but a bad master, and a futile tool for those who have no other master. The whole scientific enterprise of the last four centuries could yet prove demonic. We may be caught in a Faustian bargain, in a scientific sink.

Science bears on, affects value at the same time that it bears, carries what values we may have assigned to it. Science bears on value because it redescribes the world. We have to think only of the impacts of Copernicus, Newton, Darwin, Einstein, or Heisenberg to see how the passing of the science story through successive descriptions of the natural world brings tumult into theology. If we have been mistaken about how nature is operating, then, when science corrects this, values thought to be derived from God and found in nature must be reformed to fit the redescriptions. Our value judgments require an appropriate congruence with the way the world works in its cosmology and ecology. Similarly, in the human sciences, accounts of social functioning, or emotional drives, or social conflicts have their spillover into evaluative issues.

Further, science offers instrumental capacities and gives us the opportunity not just to understand the world, but to change it. A society can allocate funds and energies to eradicate malaria or to build thermonuclear weapons. Which should it do? We might undertake genetic engineering, but what optimal human genotype should we design? Science sets routes before us, between which it does not help us to choose. Over time, even the pure science we elect to do is with much eye to the uses society has for it. Here, not less than in religion, truth for truth's sake gets tugged over to truth for use's sake. Science presents vastly increased opportunities for self-actualizing, and yet, rightly understood and short of scientism, draws back in silence before which options we ought to take. We are left to consolidate and even choose roles through the chapters we write in a history in which science offers no paradigmatic plot.

Thus, for all the bearing of science on value, for all its being a value-laden enterprise, the conviction is well grounded that science of itself is value-free in the crucial sense that there is no such thing as the purely scientific guidance of life, whether of personal or social life, or of setting new directions in history. The point is that the values surrounding the pursuit of science, as well as those that govern the uses to which science is put, are not generated out of the science. These are rarely even launched from within the science proper, but we certainly do not select between them by science itself. Science gives us no resources with which to carry out fundamental decisions about good and evil, about meaningfulness and worthlessness, even though science casts upon us new questions and recasts old questions that it cannot answer.

The truth registered by the *is-ought* distinction is that there is no iron logic by which to move from purely scientific premises to evaluative conclusions. One must also own some valuational premises, which science alone seems never to provide. The boundary between *is* and *ought* is real but a twilight zone. Our values are formed

and reformed in response to what we believe the world is like, and what we are prepared to believe about the world in turn, descriptive though it may seem, is linked into a feedback loop with our value sets.

Science affects values, is infected by values, and has its motor force in values. Where there is science, values lie in the offing. But science itself is barren for value generation. Francis Bacon complained against teleology (and, by extension, against theology) that, like a virgin consecrated to God, it bore no explanatory offspring.⁵⁸ We may cast a reverse complaint against science; lacking consecration, it bears no valuational offspring. The sterility of science at the cores of value production has kept religion fertile even in an age of science. Numbers and equations say nothing about joy and affliction. The problem of evil, which is often thought (probably rightly) to be the chief obstacle to belief in God, proves no less an obstacle to any scientific guidance of life. For evil does not merely linger after theism lapses. It grows worse, when science proves itself theoretically incompetent to handle questions of good and evil, and in practice able to multiply evils as readily as goods. Owing to the collapse of earlier theology, owing to the growth of past and present science, we have ceased to believe that the Fall of man lies behind us. But, owing to the growth of present and future science, we fear that it may lie ahead.

Regardless of one's scientific expertise—indeed, in extension of what good scientists know—no religious truths can come to us until we offer ourselves up to be controlled by the reality we seek to study. This means to open life up to the lure of the incoming Spirit, since we are called to a storied adventure from nature to spirit. It will no longer suffice to be prescientific, whatever insights of the prophets and saints we may continue to find canonical. Science is too much with us, and there is too much truth in it. But neither can one be merely scientific, since, in the ways just summarized, seeming "mere science" falls into the service of our unregenerate value sets, and is unable to generate nobler value sets, unable (in religious terms) to regenerate us. What is required is to be postscientific or (to adapt the term) transscientific. We must go beyond science. We see now what science cannot supply, and why it cannot supply it.

Science is the most powerful analytic tool yet developed, especially in its accounts of nature, perhaps less so of human nature and culture, and less so still in history. But it has proved steadily unable to tell us on its own resources what we most want to know about each of the four: how to value nature, how to guide human nature, or culture, and how to interpret and make history. We do not know what to believe, or how to behave. We do not know what text to write next. This needs carefully to be said, but it is importantly true.

One can find room for God in and beyond the sciences, in and beyond nature and history; but this room for God, though it is impressive, is not so unambiguous or commanding as to produce life-orienting faith, unless and until one finds room for God within one's own personal life. But this need not be cause for lament. This too is intelligible under the theistic model of a God who nurtures freedom, love, and faith. This too is part of God's design. God did not leave himself without witness in nature and history, but God leaves a chief witness in the person, to be found as, and only as, the person in daring expectancy reflects God.

Doing the Truth on the Cutting Edge of Nature and History

We must do the truth. We test, and are tested in, whether our self-actualizing can also actualize the divine presence. We must live at the eye of the storm. We must nurse a way through the possible scientific states of humanity (which at microlevels involves nursing a way through the quantum states), doing good and fighting evil, so as to let the divine Spirit, if such there be, come nearer in amazing grace. We see whether we can prophesy, that is, speak for God. We try to see whether we can image God. We act our parts in the story. The energy of our experiences here, biographically and culturally, will enable us to look behind and around at nature and history and to judge whether the cosmic and the earthen drama is a divine current. But we must be in the river to sense the flow. We thereby gain spiritually what physicists call a reference frame for participatory observations. We must look carefully at objective nature, in the light of the best sciences available, and we have sought to do this in the progressive chapters of this work. But that is necessary, not sufficient, for the formation of a creed.

In the final analysis the incumbent judge finds himself at the crossroads of nature, history, and God. Only caught in this grip can one know who and where one is. Perhaps such an emphasis on inwardness and participation will at times lead us to false estimates of what is going on in the world outside of us. But the deeper truth is that spirituality is just what the outside world has led to. We are the richest of the natural systems, its fruit called to continue the creation. Our performance here enables an accurate estimate of all our history and environment.

This posits a kind of privileged access to the religious viewpoint, but not one that ignores the human place in nature, or seeks an inwardness uncorrected by scientific redescrptions and philosophical criticisms. Rather, it notices, as a result of this, that in epistemic rank and in evolutionary place humans are a privileged species. They alone are called to this level of awareness. Further, within the possible states of human awareness, states of spiritual expectancy are still more privileged, with their vision into what in ourselves is taking place, deepening the world drama thus far.

In *coping* with our own world assignment religiously, we gain insight into whether our beliefs are *copying* the world order. Here the correspondence theory of truth (belief as a map of the world) must submit to a higher pragmatic view of truth (belief as instrument for living in and traveling through the world, which is what maps are for). To see whether our beliefs here are justified, or true, one has to see whether they can justify life, make life just, loving, free, spirited, and spiritual. One has to be born of blood, of fire, of the will of God. One has to be plunged under the floodwaters and raised up to see the descending power of the Spirit. In this sense, judgments about what *ought to be* not only enable us to detect what *is*, they are self-fulfilling and determine what comes to pass.

Any teaching has to be evaluated, certainly, on the basis of whether it is true; but it has to be evaluated "for what it is worth." In the end we turn to *truth* for *worth*, on the axiom that we should get some clues about truth from the worth of a teaching. We want to know what is so, whether we like it or not, whether it is satisfying or not. Yet a truth that is nonilluminating about values cannot be the final word in a world that willy-nilly we must evaluate. We are not simply after a truth's

working, not mere pragmatism, but its worthiness, its overall serviceability as an evaluative account, its *truth-value*, with an emphasis on both those terms in inseparable conjunction. We want truth in some true-false sense—more or less, analogically and approximately. But we cannot be near the elemental word until the *truth* is carrying *value*. Unless a doctrine can tell us something about what the story is worth, and show us how to be worthy actors in the story, it has not yet achieved salient truth-value. Here science proves to lack ultimacy, while religion offers the pearl of great price.

NOTES

1. The term "supernatural" does not appear until the early Middle Ages, after the classical period, but before the rise of science. Earlier there were "marvelous events," "signs," or "mighty acts."
2. Anthony F. C. Wallace, "Rituals: Sacred and Profane," *Zygon* 1 (1966): 60-81, citation on p. 76.
3. Many process thinkers (as we later see) will soften the intensity of emergence portrayed here, finding analogues of mind and consciousness in all living things, and analogues of life and sentience in abiotic processes. An attenuated psychical pole perfuses physical objects. But such panpsychism is not an easy claim to understand or accept; it is hardly simpler than the startling emergence it seeks to soften.
4. Mark 4:28.
5. Ralph Waldo Emerson, "Compensation," *Essays* (New York: Thomas Y. Crowell, 1926, 1961), pp. 67-92, citation on p. 74.
6. 1 Cor. 13:12.
7. Prov. 27:17.
8. The position to follow is found among left-of-center Protestant theologians, eminently in Rudolf Bultmann, but also in John Macquarrie, Dietrich Bonhoeffer, John A. T. Robinson, Norman Perrin, mixedly in Paul Tillich, and approached in Karl Heim. Many precedents for it lie in Friedrich Schleiermacher and Immanuel Kant, going back to Descartes. Martin Buber is a Jewish representative (despite cryptic recognition of Thou relations with nature). Roman Catholic representatives are less evident—perhaps Leslie Dewart.
9. Rudolf Bultmann, "Is Exegesis without Presuppositions Possible?", in Schubert M. Ogden, ed., *Existence and Faith* (New York: Meridian Books, 1960), pp. 289-297, citation on pp. 291-92.
10. Rudolf Bultmann, "Faith in God the Creator," in Ogden, *Existence and Faith*, pp. 171-182, citation on pp. 174-175. Italics in the original.
11. Norman Perrin, *The Promise of Bultmann* (Philadelphia: Fortress Press, 1979), pp. 74-75.
12. *Ibid.*, pp. 86-87.
13. For two-language accounts, see Paul L. Holmer, "Scientific Language and the Language of Religion," *The Grammar of Faith* (San Francisco: Harper and Row, 1978), pp. 54-80; Donald D. Evans, "Differences Between Scientific and Religious Assertions," in Ian G. Barbour, ed., *Science and Religion* (New York: Harper and Row, 1968), pp. 101-33.
14. Rudolf Bultmann, "The Meaning of the Christian Faith in Creation," in Ogden, *Existence and Faith*, pp. 206-225, citation on p. 207. Italics in the original.
15. William Temple, *Nature, Man, and God* (London: Macmillan and Co., 1935), p. 306.

16. The presiding genius of the position sketched here is Alfred North Whitehead, but he crystallizes frequent themes in evolutionary theism. Charles Hartshorne, John B. Cobb, Jr., and D. D. Williams are disciples; Ian G. Barbour is sometimes sympathetic, and Schubert M. Ogden is a process existentialist. There is independent development in F. R. Tennant, Nicholas Berdyaev, Bernard E. Meland, Samuel Alexander, Henri Bergson. One sort of Roman Catholic representative is Teilhard de Chardin; another is David Tracy. A form bordering on soft naturalism is found in Henry Nelson Wieman, and there are many precedents in G. W. F. Hegel.
17. Alfred North Whitehead, *Science and the Modern World* (1925) (New York: Free Press, 1967), p. 72.
18. *Ibid.*, p. 107.
19. Edmund W. Sinnott, *Matter, Mind and Man* (New York: Atheneum Press, 1972), p. 153.
20. Chapter 3, p. 110.
21. Alfred North Whitehead, *Process and Reality* (1929) (New York: Harper and Row, 1960), p. 377; cf. p. 64.
22. Recall Chapter 6, p. 285.
23. Whitehead, *Process and Reality*, pp. 524, 526, 532.
24. Charles Hartshorne, "Process Philosophy as a Resource for Christian Thought," in Perry LeFevre, ed., *Philosophical Resources for Christian Thought* (Nashville: Abingdon Press, 1968), pp. 44-66, citation on p. 65.
25. Alfred North Whitehead, *Adventures of Ideas* (New York: Free Press, 1967), p. 277.
26. Whitehead, *Process and Reality*, p. 521.
27. Charles Hartshorne, "God and the Meaning of Life," in Leroy S. Rouner, ed., *On Nature* (Notre Dame, Ind.: University of Notre Dame Press, 1984), pp. 154-168, citation on p. 156.
28. Charles Hartshorne, *The Divine Relativity* (New Haven: Yale University Press, 1948, 1974), p. 59.
29. Whitehead, *Process and Reality*, p. 524.
30. *Ibid.*, p. v.
31. *Ibid.*, passim.
32. Temple, *Nature, Man, and God*, p. 259.
33. The definition and array is from Karl Barth, *Church Dogmatics*, vol. 2, part 1 (Edinburgh: T. and T. Clark, 1957), cf. p. 257, and forms the outline of the doctrine of God. Barth is eminently transscientific, but the discussion that follows is not meant to be Barthian, but rather a generalized theism as taught in most mainstream or conservative theological seminaries in Europe and America, Protestant or Catholic. Despite many differences among them, such theologians as the following have much in common: Karl Rahner, Reinhold Niebuhr, Jürgen Moltmann, Wolfhart Pannenberg, William Temple, T. F. Torrance, and Ian G. Barbour. With Christian subtractions, it fits much conservative Judaism. Two Protestant works oriented to science are Wolfhart Pannenberg, *Theology and the Philosophy of Science* (Philadelphia: Westminster Press, 1976), and Langdon Gilkey, *Maker of Heaven and Earth* (Garden City, N.Y.: Doubleday and Co., 1959). A survey by a Roman Catholic is Stanley I. Jaki, *The Road of Science and the Ways to God* (Chicago: University of Chicago Press, 1978).
34. Exod. 3:14.
35. Gen. 1:2, 20, 24.
36. George Wald, "Fitness in the Universe: Choices and Necessities," in J. Oró et al., eds., *Cosmochemical Evolution and the Origins of Life* (Dordrecht, Netherlands: D. Reidel Publishing Co., 1974), pp. 7-27, citations on pp. 8-9. See Chapter 2, p. 70, and Chapter 3, p. 114.

37. For discussion of narrative in Bible and theology, see Hans W. Frei, *Eclipse of Biblical Narrative* (New Haven, Conn.: Yale University Press, 1974); George W. Stroup, *The Promise of Narrative Theology* (Atlanta: John Knox Press, 1982); James A. Wiggins, ed., *Religion as Story* (New York: Harper and Row, 1975); Wesley A. Kort, *Narrative Elements and Religious Meanings* (Philadelphia: Fortress Press, 1975); Gabriel Fackre, *The Christian Story*, rev. ed. (Grand Rapids, Mich.: William B. Eerdmans Publishing Co., 1984); Brian Wicker, *The Story-Shaped World* (Notre Dame, Ind.: University of Notre Dame Press, 1975); Stanley Hauerwas, *A Community of Character* (Notre Dame: University of Notre Dame Press, 1981); Stephen Crites, "The Narrative Quality of Experience," *Journal of the American Academy of Religion* 39 (1971): 291-311; Julian N. Hartt, "Theological Investments in Story" (with discussion), *Journal of the American Academy of Religion* 52 (1984): 117-156; James L. Mays, ed., *Narrative Theology* (a thematic issue), *Interpretation* 37, no. 4 (October 1983): 339-401; Paul Ricoeur, *Time and Narrative*, vol. 1 (Chicago: University of Chicago Press, 1984).
38. Hence, what we look for in Genesis 1-3 is the defeat of polytheism. Israel is struggling to envision the one true God, launching monotheism. We should not look to Genesis 1-3 for science; that was not to be launched for two thousand years, not until Europe—though when science comes, the monotheism that came earlier must be reconciled to its offspring.
39. Heb. 2:10.
40. Gal. 3:13.
41. Cf. 2 Cor. 4:10.
42. Chapter 6, p. 245.
43. Chapter 6, p. 245.
44. Chapter 6, p. 275.
45. Cf. Gal. 6:17.
46. John 1:14, 16.
47. Deut. 33:27.
48. Ps. 139:5.
49. Cf. Heb. 5:8.
50. François Jacob, "Evolution and Tinkering," *Science* 196 (1977): 1161-67.
51. Rom. 1:20.
52. Acts 14:16.
53. Rom. 1:19, 21.
54. See Figure 1.1. p. 2.
55. John 7:17 (New English Bible), 3:21, 8:31-32.
56. Matt. 5:8.
57. Luke 10:27.
58. Francis Bacon, *Of the Dignity and Advancement of Learning (De Augmentis)*, in *The Works of Francis Bacon*, vol. 4, ed. James Spedding (New York: Garrett Press, 1968), p. 365.