# NATURAL SCIENCE AND THE SPIRITUAL LIFE

**Grant R. Doering***

## INTRODUCTION

During a study of the effects of the scientific theory of evolution on Christian thought, my attention was drawn to an address by John Baillie entitled: "Natural Science and the Spiritual Life. Being the Philosophical Discourse Delivered before the British Association for the Advancement of Science at Edinburgh on 12 August 1951."[1] At that time Baillie was the principal of New College and Professor of Divinity at the University of Edinburgh. The title was a source of fascination, so much like that of an 18th century book, yet a current publication.

My intention in presenting this review-essay is to provide some ideas about the relation of science and religion. As a scientist who has accepted religion as valid and important in his life, I have been in a position to feel harassed, and not always very intelligently so, by both people and writers who claim a religious motive, and by people and writers who assert no such motive—and who, on the contrary, proclaim to be on some value-free neutral ground. And then a third source of intellectual anguish arises from the well-nigh unresolvable clash and intellectual warfare between fundamental religious groups and parts of the scientific community who are allied with constitutionalists and civil libertarians. In my view, both groups have some right on their side, both much wrong. But, can one of any religious persuasion not feel a sympathy for the attack on another's beliefs? Or from the other view, can a scientist tolerate the misre-presentation of what science is, and what its knowledges are? And from another view, is it wise to allow certain specific doctrines of particular religions to enter public education, there to be taught as though they were science to the youngsters of other faiths, the tenets of whose faith may be diametrically opposed to the doctrines taught.

*Dr. Doering is Professor of Biology at The Academy of the New Church College, Bryn Athyn, Pennsylvania. He wishes to acknowledge the support of the Research Committee of the Academy.

[1] John Baillie, *Natural Science and the Spiritual Life*, Scribners, New York, 1952. Hereinafter, quotations from Baillie will be followed by page number only.

The heat generated by this conflict has been great; the light minimal. Thus it was a genuine delight to study the cool, wise and applicable words of a recognized academic speaking to his peers. He shows that as a Christian he accepts science as a good and useful adjunct to civilization. He further shows his belief that science and society must keep a religious nature, or risk profound, even disastrous, perversion and decay.

Baillie writes, it seems to me, as an educated Evangelical Christian, who argues that science and faith are not two camps separate and apart, but two aspects of each person. He also presents to us the pagan Greek root of science, and the powerful Christian impulse to it. The address opens with the text "Can two walk together except they be agreed" (Amos 3:3). Indeed, he grants that science and religion from the inception of science have had interplay, yet have not always been in step. However, we oversimplify when we assume the two outlooks must be in different people: "Surely," he writes, "the depth of the problem emerges only when the man of science and the man of faith are the same man, so that the two who have to walk together are but two elements in the total outlook of a single mind" (p. 5). To make the case for the scientific portion of mind, Baillie quotes A.N. Whitehead, who earlier wrote that the "growth of science has practically recoloured our mentality, so that modes of thought, which in former times were exceptional, are now broadly spread throughout the educated world...; this new mentality is more important even than the new science and the new technology" (p. 7).[2]

Baillie makes a weaker case for us as men of faith, but shows, by example, that life without faith is cold and gray. He cites a passage from the autobiography of Charles Darwin, who wrote: "Disbelief crept over me at a very slow rate until at last it was complete" (p. 8). In the process, what Darwin called his "higher tastes" were "atrophied" until he could derive little pleasure from a fine landscape, "could not endure to read a line of poetry" and found Shakespeare"intolerably dull" because his mind had become "a kind of machine for grinding general laws out of large collections of facts. " Darwin regretted the loss of "the state of mind which grand scenes formerly excited in me and which was intimately connected with belief in God. " So Baillie notes that undoubtedly there are others like him.

[2] From A.N. Whitehead's *Science in the Modern World,* Macmillan, New York, 1925.

Yet he suggests that there have been many 'who seeing life steadily...and whole" (p. 8) have joined science, aesthetic sensibility, philosophic mind and Christian faith. And having so written, he begins to lay out his principle thesis as follows.

## THE ARGUMENT

"It is with the understanding of the difference between these two approaches, and the relation between them, that western thought has been mainly concerned during the last two thousand five hundred years" (p. 11).

Now we see his key point; Baillie now focuses on the tension between the mind of science and the mind of faith. To Baillie, "the most important single passage in the whole literature of western philosophy is Plato's report in the *Phaedo* of Socrates' autobiographical reminiscences as he sat in prison awaiting his death" (p. 11). Socrates, it is reported, said that when as a young man he had a consuming interest in natural things, he concluded that he was unfit for these studies of nature since in doing them he seemed to forget or unlearn many important things he had formerly known quite well. Then, Socrates reports, he discovered that Anaxagoras had said that the ultimate cause of all is mind. Socrates is quoted as reasoning: "If all things are ordered by mind, then they will be ordered for a purpose and in the best possible way, so that if one wished to discover how any particular thing is ordered, all we shall have to do is to consider how it is best that it should be ordered, and then we shall know that it is ordered in that way....As I [Socrates] went on reading, my splendid hopes were grievously disappointed. I found the man made no continued use of mind at all, but suggested all sorts of other absurd causes for things" (p. 12). As Anaxagoras seemed to be saying that "I, Socrates, do all I do by my mind, but who (then) assigns a cause for each of my actions? He says that I Socrates am sitting here now because my body is composed of bones and muscles [Socrates then explains what bones, muscles, skin do] and that is the *cause** of my sitting here [in prison] all huddled up" (p. 13). Socrates disagrees with Anaxagoras: "The real cause...is quite simply that...I have thought it right and just to sit here....To call these other things causes is too absurd. Had the contention been merely that without the aid of bones and muscle and the rest I could

[3] These two types of cause set out by Socrates later come to be referred to as mechanical or efficient cause (Socrates' bones) and final cause (Socrates' mind).

not carry my purposes into effect, that would have been true enough. But to say that I do what I do because of them, and not because my mind knows what is best, is a very loose and careless way of speaking" (p. 13).

Socrates concludes that he gave up natural science lest the sharpening of the bodily senses should lead to a blindness of the soul. Instead he determined to discover the truth about things through the judgments men make about them. He thus sought to unlock the secrets of ultimate reality.

It seems useful, then, to quote Baillie at length: "The whole later history of western thought may be fruitfully conceived as the story of the various ways in which thinkers have dealt with the issue thus first set before them by Socrates, and our present problem of the relation of science to faith will in principle be solved if we can succeed in determining how far Socrates was right and how far he was wrong" (p. 15). After the death of Socrates, Plato developed his teacher's thesis. Aristotle, however, in contrast to Socrates, returned to some of the Pre-Socratic traditions and gave great attention to nature and mechanical or efficient cause. Nevertheless, Aristotle insisted—and this is most important to remember—that no phenomenon was fully explained scientifically until the purpose it served was considered. As is well known, Aristotle's ideas entered the accepted canon of Christianity and indeed grew to be pre-eminent. This assured that investigation of the natural world (natural science) would still be deeply involved in the search for such final cause. But it was from such supposed final cause that the most extraordinary nonsense, to the modern mind, was advanced as natural science. And the church which stood for the concept of the final cause clearly thought that natural truth came from revelation, and moved thence toward explanation of natural phenomena: as St. Augustine wrote, "nothing is to be accepted save on the authority of Scriptures since greater is that authority than all the powers of the human mind."[4]

Baillie, having introduced the widely held proposition that some of the roots of modern scientific thought lie in Grecian antiquity, then develops his primary thesis. In this thesis he holds that there is a genuine tension and lack of compatibility between the ideas of the great Greek philosophers and Christianity, and this tension existed

[4] Andrew D. White, *A History of the Warfare of Science and Theology*, Brazillier, New York, 1955. p. 25 (first published 1895).

even though Christian thought had explored and totally absorbed, for example, Aristotle into church dogma. Baillie proposes that it was only possible for modern science to emerge when this intellectual tension was resolved in favor of Christian revelation and its revealed and dogmatic doctrine of creation. For this doctrine teaches that God created, but was not—as the Greeks pantheistically thought—in and a part of that creation.[5]

Baillie then proposes that the intellectual divorce of the mechanical explanation of a phenomenon from the Aristotelian idea that no explanation was complete until the phenomenon's purpose was accounted for, essentially hailed the modern era of science.[6] Bacon and Descartes, Baillie suggests, were pre-eminent among those who rejected such Aristotelian purpose or final cause. Bacon wrote that "the introduction of such causes into physics has displaced and driven out the investigations of physical causes making men rest in specious and shadowy causes...to the great detriment of science, and this I find to be true not only of Plato who always casts his anchor on the shore, but also Aristotle, Galen and many others who very frequently sail upon the same shallows" (p. 16). This is not to deny final cause or purpose; for, as Baillie suggests, Bacon means that such causes, such purposes, are not to be discovered by empirical methods. Bacon does not doubt providential ordering of nature when it is said to be inscrutable to scientific observation, instead we exalt it: "...the wisdom of God is more wonderfully displayed, when nature acts in one way and providence elicits from it something else, than if the characters of providence were stamped on all natures forms and movements" (p. 17).

[5] This concept—Creator, at times Sustainer, of creation, and yet not part of creation—has presented a challenge of interpretation to Christians. One who responded to the challenge was Emanuel Swedenborg. An account of his early attempts to understand and explain this problem is given in A.H. Stroh's *Summary of the Principia,* SSA, Bryn Athyn, Pennsylvania, 1904. See also CO. Sigstedt's *The Swedenborg Epic,* Bookman Associates, New York, 1952, pp. 111-112.

[6] There is not universal acceptance of this view. See, for example, A.G.R. Smith in *Science and Society in the 16th and 17th Centuries,* Science History Publications, New York, 1972, p. 178. Smith wrote "It was this breach between the assumptions of the intelligentsia and the uneducated [which] was far more profound than any changes in ideas about God and man which the Protestant reformation had brought about....It is the years 1680 to 1720 roughly that mark the transition from the middle ages to 'modern times.' "

Descartes was more certain of God than he was of nature, yet he insisted that science must cease its search for final cause: "we ought not to presume so far as to think ourselves sharers in the counsels of Deity" so as to discover "the ends which God proposed for Himself in the creation of the world" through the examination of "those effects which we perceive by our senses" (p. 18).

The reason to break from the authority of Aristotle was a reason of faith, not science, Professor Baillie argues. "The presuppositions of the older science were all associated with a pagan theology. The physical world emanated from God and at the very least was of the same nature. Nature was divine and held the ultimate principle of its explanation within itself. This led Bacon to write that Aristotle was 'substituting nature for God and having done so had no further need for God' " (p. 19). So Baillie tells us the ancient science was deductive: discover pattern then deduce the details. Discover a thing's essence then infer what its behavior is. But this does not work, Bacon and Descartes have argued; the pattern is hidden, we must begin at the other end, we must be inductive, observe and experiment.

Where did these early modernists get such ideas? Some historians [while there is yet division on the issue] agree with Michael Foster who asked: "What is the source of those un-Greek elements in the modern science of nature by which the peculiar characteristics of the modern science of nature were to be determined?" Foster's answer: "The Christian doctrine of creation."[7] This "Christian Theological attitude" according to A.R. Peacocke "provided a fertile soil for the growth of the scientific attitude in the seventeenth century."[8] The world and all that is within it is not Divine but it is contingent on a Divine.

However, we must not deceive ourselves into the belief that present science is purely inductive. That is not at all the case. The Aristotelian ideas so deeply imbedded in our culture continued to have impact, and science for Baillie and Peacocke is both inductive and deductive. With this I agree. Of this inductive mode Foster writes: "...the method of Galilean science...presupposes (a) that it is impossible that nature should not embody a mathematically intelligi-

[7] Michael Foster, 'The Christian Doctrine of Creation and the Rise of Modern Natural Science," *Mind,* 43:448, 1934.

[8] A.R. Peacocke (ed.), *The Sciences and Theology in the 20th Century,* Univ. Notre Dame Press, South Bend, Indiana, 1981.

ble scheme and exhibit laws mathematically definable; but (b) that, which of possible alternative schemes it embodies, and which of several laws equally definable mathematically it exhibits, *can be decided only by appeal to observation and experiment."* "[9] That illustrates the two modes of thought: deduction, the Greek supposition of mind, in this case a mathematically statable law inherent and true in the thing itself; and induction, employed by the Christians Galileo, Bacon, and Descartes who would all test the suppositions by various experiments.

Now that Baillie has introduced the concept that modern analytical natural science springs from Christianity and could not possibly have happened without that Christian *Weltanschauung,* he presents the two following and subsidiary views. The one suggests that science essentially fails, apart from Christianity. The other is that modern science influences Christian thought and faith. I intend to show briefly the authors development of these two secondary theses.

**The First Subsidiary Thesis**

The first view may be restated to say that Christianity is essential for science to flourish. In the past, men such as Bacon and Descartes *knew* that man had fallen, through Eve and the serpent, from grace. It was a religious tenet; yet man was commanded by his Creator to have dominion over the earth. For these men (and many to follow) such dominion and at least a partial return to paradise lay in a knowledge of nature. Descartes wrote: "...whereby knowing the force and action of fire, water, air, the stars, the heavens and the rest of our environment as directly as we know the different skills of human artisans, we may put the former no less than the latter to their proper uses and thus render ourselves masters and lords of nature" (p. 19). This mastery could not be for a pagan scientist.[10] Why? To be brief, it could not be for the Hebrews because they "lived in a demon-ridden world" (p. 30). Nor for the Greeks, for as Plato wrote "all things are full of Gods." Baillie, to emphasize his point, quotes the historian Nicolas Berdyaev at some length. Ber-

[9] Michael Foster, *op. cit.,* p. 24. Emphasis added.

[10] If one makes oneself familiar with the causes of environmental concern, their spokesmen often inveigh against such Christian and utilitarian views, seeking at times to replace them with some of the nature worship of Amerinds, or various Eastern theologies.

dyaev wrote: "I am convinced that Christianity alone made possible both positive science [in this context read science not seeking final cause] and technics. As long as man had found himself in communion with nature and had based his life upon mythology, he could not raise himself above nature through an act of apprehension by means of the natural sciences or technics. It is impossible for man to build railways, invent the telegraph or telephone, while living in the fear of demons. Thus for man to be able to treat nature like a mechanism, it is necessary for the demonic inspiration of nature and man's communion with it to have died out in the human consciousness. " And Foster has asserted that the attitude of an ancient Greek scientist "was an intellectualized form of nature worship... [and nature] was changeless and eternal: the idea that it might be subjected to mastery by the human will could hardly have been entertained by a Greek Thinker" (p. 31).

So that the then current philosopher at the University of Edinburgh, John McMurray, is quoted in 1951 as having written that not only is modern science "the product of Christianity but its [Christianity's] most adequate expression so far" (p. 31). While A.D. Ritchie, the other philosophy professor in this prestigious institution, wrote: "[that] the virtues of the man of science as he has appeared in Western Europe are just Christian virtues is perhaps not so obvious. The virtues, belief in free discussion, tolerance and equal treatment of others, all spring from respect to persons and cannot exist without that respect....If Western Europeans have practiced these or any of the more difficult virtues at any time, it has been in consequence of Christian teaching and example" (p. 32).

Baillie wrote in the 1950's. Today, however, we are in what some have called the post Christian era. I believe it is too soon to have a good test of his second subsidiary thesis, but let us have a brief look at it.

**The Second Subsidiary Thesis**

When Faith fails, Science will fail, for if nature has no intrinsic meaning, speculative interest fails. Kepler felt that in discovery he was "Thinking God's thoughts after Him. With the loss of such faith, science will become pragmatic and inherently purposeless, man's only concern will be to subdue that purposelessness to our own ends. When these ends are not informed by faith science becomes a desperately dangerous tool" (p. 35). Baillie insists our dominion over nature is to be exercised for the glory of God. The

use of science must be controlled by the observation of Gods laws. "When the ends science serves grow corrupt, the purity of its impulse is corrupted not less" (p. 36). We previously have been exposed to the thought which Professor Ritchie advanced that the virtues of science are Christian virtues; humility, self effacement, tolerance, impartiality, and a community of thought that transcends. When those virtues lose their status and are looked on as obsolete standards, the effect on scientific progress may be disastrous. He asks us to remember that the great forbears of today's science—Descartes, Copernicus, Gassendi, Galileo, Kepler—were all believers in purpose in nature. Bacon is quoted: "For while the mind of man looketh upon secondary causes, it may sometimes rest in them and go no further;...when it beholdeth the chain of them, confederate and linked together it must needs fly to Providence and the Deity" (p. 37).

Has Baillie's serious prediction (that science apart from faith fails) come to pass? There are some signs that it has. A book entitled *Betrayers of the Truth*[11] which documents the recent frauds in big time science was published in 1982. It is not a particularly daring or bigoted step to note that in an examination of the histories of the perpetrators of the frauds, Christian roots are notoriously lacking as would be expected, since many of the charlatans, are of other cultures. Thus the virtues spoken of above simply would not be a part of their lives. But to give optimistic balance, Freeman Dyson of the Institute for Advanced Study at Princeton wrote in 1979: "Some of us may be willing to entertain the hypothesis that there exists a universal mind or world soul which underlies the manifestations of mind that we observe."[12] He also wrote after discussing a series of physical happenings in the universe that "the universe is an unexpectedly hospitable place for living creatures to make their home in. Being a scientist, trained in the habits of thought and language of the twentieth century rather than the eighteenth, I do not claim that the architecture of the universe proves the existence of God. I claim only that the architecture of the universe is consistent with the hypothesis that mind plays an essential role in its functioning."[13] This issue is of course still open. That major scientific funding is

[11] William Broad and Nicholas Wade, *Betrayers of the Truth,* Simon and Schuster, New York, 1982.

[12] Freeman Dyson, *Disturbing the Universe,* Harper and Row, New York, 1979, p. 252.

[13] *Ibid.*, pp. 251-152.

spent on the work of frauds and charlatans, while sad, does not imply the total, or even broad ranging collapse of western science. Nor does the acceptance of a higher Organizer, a Mind in the universe, by one of the towering intellects of western science (Dyson) imply that any great number of modern scientists are rushing to embrace a belief in and worship of the Deity. These were presented not as decided issues but as extensions from Baillie's first subsidiary thesis.

Turning now to Baillie's second subsidiary thesis, he has said: "I myself...learned to understand the vital part which the scientific temper must be allowed to play within Christian life and thought" (p. 33). He had learned that there could be no deep spirituality that had not been subjected to the discipline of the *thing* element in religion. "The life of the spirit requires," he writes, "the full recognition of the given-ness of its natural environment" (p. 33).

He also has learned that man's character comes in dealing with nature; for character itself is formed through the exigencies of life in the world. He argues, and I paraphrase, the point further: when science is developed to a profoundly dehumanized, desentimentalized, rigorous mathematical determinism and soulless mechanism (because of the right and necessary ideal of physical science) then the strain which is placed upon our spirits by the impersonality of nature is often a discipline of the most distressful kind. But we should not hasten for a release from this strain. As with Job's false comforters who in making faith too easy rob (faith) of its depth.

To extend this line of thought I will, and from a different source, add another insight. Peacocke, while introducing the symposium "The Sciences and Theology in the Twentieth Century," writes of the influence of scientific thought on theologic thought. He has found that "Changes have also occurred in theology: for myself [Peacocke] I notice that there is an increasing awareness not only among Christian theologians, but also among believers in general that, if God is in fact believed in as the all-encompassing Reality that Christian faith proclaims, then that Reality is to be experienced in and through our actual lives as biological organisms who are persons, part of nature and living in society. So knowledge of nature and of society can never be irrelevant...to our experience of God, if God is He whom the faith affirms...."[14] After some further remarks on the failure of alternative theologies such as Neo-Barthian, Peacocke concludes this portion, as we shall, by writing: "For Christian

[14] A.R. Peacocke, *op.cit.*, p. ix.

theology, there can certainly be no retreat into the citadel, and science and Christian theology cannot avoid encountering each other and thinking anew what kind of interrelationship they might have today."[15]

## CONCLUSION

In conclusion, return to the cell of Socrates—when so close to his death. Baillie feels that he has been able to justify Socrates' main concern for mind—or faith—or God above all else. However, Socrates was wrong, Baillie thinks, in his impatience with the search for secondary and mechanical causes. He was wrong in his desire to place final cause in scientific explanation. He was wrong to believe details of nature could be deduced from the ideal ends. But "he was right in his conviction that it is far more vitally important for us to know whither nature tends than to know how it works, and our very interest in how it works must ultimately evaporate, if we are unable to believe that it tends toward some good" (p. 42). Remember, as Baillie cautions "the scientific outlook on life is not produced by science. For science produces no outlook. The outlook which it is made to serve is determined for science by some judgment of value, which cannot be spirited out of its own [sciences] observations of facts, [but from] some sensed quality which cannot be scientifically measured because it has nothing to do with quantity or measure" (pp. 38-39).■

[15] *Ibid.,* p. x.